NCIPC Board of Scientific Counselors

December 12, 2018

National Center for Injury Prevention and Control
Centers for Disease Control and Prevention
Atlanta, Georgia

Table of Contents

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
BOARD OF SCIENTIFIC COUNSELORS (BSC)
Centers for Disease Control and Prevention (CDC)
National Center for Injury Prevention and Control (NCIPC)
Twenty-Eighth Meeting
December 12, 2018
Chamblee Campus, Building 106, Conference Room 1-A
Atlanta, GA 30341

Summary Proceedings

The twenty-eighth meeting of the National Center for Injury Prevention and Control (NCIPC, Injury Center, Center) Board of Scientific Counselors (BSC) was convened Monday December 12, 2018. The BSC met in open session in accordance with the Privacy Act and the Federal Advisory Committee Act (FACA). Dr. Victoria Frye served as chair.

Call to Order / Roll Call / Introductions / Meeting Logistics

Arlene Greenspan, DrPH, MPH
Associate Director for Science
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Victoria Frye, MPH, DrPh
Chair, NCIPC BSC
Associate Medical Professor
Department of Community Health and Social Medicine
City University of New York School of Medicine
City College of New York

Dr. Greenspan began the NCIPC BSC meeting, indicating that she and Dr. Gwen Cattledge would be serving as the Designated Federal Officials (DFOs). Dr. Greenspan introduced the new NCIPC BSC Chair, Dr. Victoria Frye, who already was serving on the BSC and kindly agreed to assume the role of Chair when Dr. Porucznik's term ended and she rotated off of the BSC.

Dr. Frye officially called to order the twenty-eighth meeting of the NCIPC BSC at 9:07 AM on Wednesday, December 12, 2018 and requested that Mrs. Tonia Lindley, NCIPC Committee Management Specialist call the roll and review housekeeping and logistics.

Mrs. Lindley conducted a roll call of NCIPC BSC members and *ex officio* members, confirming that a quorum was present. Quorum was maintained throughout the day. A list of meeting attendees is appended to the end of this document as Attachment A. The following conflicts of interest (COIs) were declared:

- ❑ Dr. Cunningham's husband works for Quest Diagnostics.
- ❑ Dr. Compton has long-term stock holdings in General Electric, Pfizer, and 3M Companies.

In addition, Mrs. Lindley reviewed housekeeping/logistics and requested that members participating via teleconference send an email to ncipcbsc@cdc.gov acknowledging their participation in the meeting.

Dr. Frye thanked the NCIPC BSC members and *ex officio* members for taking time out of their very busy schedules to attend the meeting, as well as for their time and commitment to injury and violence prevention. She emphasized that during the meeting, they would be engaged in important work providing guidance and advice to NCIPC leadership on its injury and violence prevention research and activities. She welcomed the following newest NCIPC BSC members:

- ❑ Dr. Donna Barnes, Howard University
- ❑ Dr. Chinazo Cunningham, Albert Einstein College of Medicine
- ❑ Dr. Frank Franklin, Multnomah County Health Department,
- ❑ Dr. Kevin Guskiewicz, University of North Carolina, Chapel Hill
- ❑ Dr. Todd Herrenkohl, University of Washington
- ❑ Dr. Mark Kaplan, University of California, Los Angeles
- ❑ Dr. Karen Liller, University of South Florida College of Public Health

Dr. Frye also welcomed members of the public who were in attendance in person and via teleconference, stressing that their interest and engagement in this process is very much welcomed and appreciated. She indicated that time would be allotted from 3:30 to 4:00 PM for those wishing to provide public comments.

Approval of Last Meeting Minutes

Dr. Frye referred members to the copy of the minutes provided in their binders from the last NCIPC BSC meeting June 19-20, 2018 NCIPC BSC. With no revisions proposed, she called for an official vote.

Motion / Vote

Dr. Coffin made a motion to approve the June 19-20, 2018 NCIPC BSC meeting minutes. **Dr. Comstock** seconded the motion. The motion carried unanimously with no abstentions.

NCIPC Update

Amy B. Peeples, MPA
Deputy Director
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Ms. Peeples welcomed NCIPC BSC members and expressed her gratitude for their time and commitment to NCIPC. NCIPC is committed to all of the injury and violence topics on which they work, but has prioritized three topics in order to dedicate the Center's time and resources in a more focused and concerted manner. Those three topics include opioid overdose prevention, suicide prevention, and adverse childhood experiences (ACEs) prevention. She provided an update on NCIPC's budget and briefly updated and highlighted some of the activities that have occurred in each of the three priority areas since the last NCIPC meeting.
In terms of NCIPC's appropriation history from 2015-2019, the Center received its largest increase in Fiscal Year (FY) 2018. This added $363 million to the budget, which more than

doubled the 2017 budget. This increase was allocated into primarily three areas. The first was an increase of approximately $5 million for the Rape Prevention and Education (RPE) Program. The National Violent Death Reporting System (NVDRS) received an increase of $7.6 million, while the opioid prevention efforts received an increase of $350 million. For FY 2018, NCIPC received level funding to continue its work from 2018. It is important to note that in FY 2019, NCIPC received a significant amount of language within its Conference Report. For the opioid prevention work, NCIPC was directed to fund local and city health departments. In addition, the Center was directed to continue to fund a health education and awareness program related to opioid overdose work.

Regarding opioid overdose prevention work, NICPC rolled out Opioid Prevention in States: Surge Support, referred to as the Overdose Prevention in States (OPIS-S2) program, in September 2018. This funding complemented three programs that NCIPC already had in the field: Prevention for States (PfS), Data-Driven Prevention Initiative (DDPI), Enhanced State Opioid Overdose Surveillance (ESOOS), and Surge Support Only (S2). The new funding acted as a bridge into the new three-year combined Data-to-Action grant that NCIPC will be releasing in FY 2019. The OPIS-S2 program awarded $155.5 million to 49 states; Washington, DC; and and 4 territories to support states in collecting high quality and timely data and to use those data to inform the response and prevention efforts at the state, local, and territorial levels. In addition, $27 million was awarded to 9 non-governmental organizations (NGOs). These entities were funded to help support surge activities at the state level. They are focusing primarily on staffing, procurement, and training to help build public health capacity. NCIPC also funded Tribes and Tribal Epidemiology Centers. $12 million was allotted for this activity, which was allocated to 11 Tribal Epidemiology Centers and 15 Tribal Entities. Drug overdose deaths among American Indians and Native Americans is above the national average. Unfortunately, recent data show that this trend is continuing. Thus, this was felt to be an important area of focus for NCIPC.

The complex nature of the opioid crisis has created a unique opportunity for the agency. As a result, CDC is working collaboratively across the agency with many centers. NCIPC appropriated $40 million out of its appropriation to fund 7 projects across CDC Centers, Institutes, and Offices (CIOs) that had the long-term goal of reducing opioid overdose deaths and reducing opioid-related morbidity and mortality, including the following:

- ❑ National Center for Health Statistic (NCHS): 2 projects
- ❑ Center for Surveillance, Epidemiology, and Laboratory Services (CSELS): 2 projects
- ❑ National Center for Environmental Health (NCEH)/Office of Public Health Preparedness and Response (OPHPR): Collaborating on a project
- ❑ National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP)/ National Center on Birth Defects and Developmental Disabilities (NCBDDD): Collaborating on a project
- ❑ National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP)

The combined projects will target 4 of the 5 key areas of CDC's strategy. This effort is being coordinated and led by the Opioid Response Coordinating Unit (ORCU), which is housed within NCIPC and is managed and run by NCIPC staff. The projects funded through the ORCU also will help to address research gaps that ultimately will result in acquiring better data faster, having more quality laboratory testing, and addressing the needs of vulnerable populations and communities.

NCIPC also has been tapped to lead two priority HHS project. The first is the Improving Opioid Prescribing Initiative, which has three arms. First,existing guidelines will be leveraged to

develop indication-specific opioid prescribing rates representing best practice, which will be compared with current indication-specific opioid prescribing rates to determine the change needed to bring current opioid prescribing in line with best practice. NCIPC also will collaborate with the Agency for Healthcare Research and Quality (AHRQ) to review the evidence pertaining to opioid prescribingfor both chronic and acute pain, with an eye towards updating the 2016 *CDC Guideline for Prescribing Opioids for Chronic Pain* if the evidence warrants it. In addition, a suite of tools and resources will be developed for providers based on existing guidelines and research to help provide needed clinical guidance now. The second project NCIPC is leading for HHS is the Opioid Rapid Response Teams. These are public health teams who will be trained and prepared to provide specialized surge support to local communities that need additional public health capacity to respond to opioid overdoses and related harms. The staff will be structured to have expertise in areas such as behavioral health, epidemiology, toxicology, and service delivery. NCIPC is in the process of recruiting staff for these teams, and anticipates being able to deploy those teams beginning in March or April 2019
Ms. Peeples highlighted two recent publications pertaining to opioid overdose. The first is *Quality Improvement and Care Coordination: Implementing the CDC Guideline for Prescribing Opioids for Chronic Pain*. This resource offers primary care providers, practices, and healthcare systems a framework for safer chronic pain care. The plan contains a set of 16 quality improvement (QI) measures for improving opioid prescribing that align with the 12 CDC guideline recommendations. These are voluntary measures intended to provide the healthcare system with the means to track their progress in implementing recommended practices over time. In September 2018, *Evidence-Based Strategies for Preventing Opioid Overdose: What's Working in the United States* was released. This resource is an introduction to 10 opioid overdose prevention strategies for community leaders, public health, law enforcement, local organizations, and others who are working to serve their specific communities.

Moving to suicide prevention, the NVDRS is a critical system for many reasons. In relationship to suicide prevention, it helps to understand and describe the circumstances contributing to suicide. Because of the increase in NCIPC's appropriation, it was possible in September 2018 to expand this system for the first time to all 50 states; Washington, DC; and Puerto Rico. NCIPC is currently working to onboard the new states and is looking forward to being able to have a national system. They have been working on this for many years and are happy to say that they have finally achieved this goal. The newly funded states include Arkansas, Florida, Idaho, Mississippi, Montana, North Dakota, South Dakota, Tennessee, Texas, and Wyoming.

This past year has been busy for NCIPC's Suicide Team, particularly in relationship to publications. A number of articles have been released that highlight the burden of suicide in the US. The first is a recent *Morbidity and Mortality Weekly Report* (*MMWR*) article, *Suicide Rates by Major Occupational Group — 17 States, 2012 and 2015*, which examined the lifetime occupations of over 20,000 people aged 16 to 64 years of age who died by suicide in 17 states. This study showed that suicide rates varied across occupational groups in 2012 and 2015, and that the suicide rates increased in many occupational groups for both males and females.

Firearm Homicides and Suicides in Major Metropolitan Areas—United States, 2012-2013 and 2015-2016 was released in November 2018. In this publication, firearm homicides and suicide rates were determined for the 50 most populous US metropolitan statistical areas (MSAs) during 2012–2013 and 2015–2016 using mortality data from the National Vital Statistics System (NVSS) and population data from the US Census Bureau. The findings showed that firearms suicide rates have continued to rise and firearm homicide rates had risen back to the rates observed in 2006 and 2007.

Chronic Pain Among Suicide Decedents, 2003 to 2014: Findings From the National Violent Death Reporting System was released in October 2018. This study found that the percentage of suicide decedents with evidence of chronic pain increased from 7.4% to 10.2%. Despite high levels of opioid prescribing for chronic pain, the percentage of all suicide decedents who had chronic pain and died by opioid overdose did not change over time.

Ms. Peeples highlighted a few metrics from the suicide prevention *Vital*signs™ that was released on suicide prevention, emphasizing how incredible the metrics were. Over 4000 news articles were published on the suicide Vitalsigns™. It was the highest for the Vitalsigns™ publication team in the history of the agency. It also set a record exposure, reaching more than 29 billion viewers across web and social media channels, and included more than 300,000 views of the Vitalsigns™ website.

In terms of the work that NCIPC is doing within the ACEs area, the Center funded 7 state health departments in September 2018 to address ACEs through the Essentials for Childhood (EfC) cooperative agreement. The awardees include: California, Colorado, Kansas (new), Massachusetts, North Carolina, Utah (new), and Washington. Over the next 5 years, these health departments will focus on implementing community-level prevention strategies and approaches from the CDC child abuse and neglect (CAN) technical package, *Preventing Child Abuse and Neglect: A Technical Package for Policy, Norm, and Programmatic Activities*. The state recipients also were able to apply for supplemental funding to implement activities to address risk and protective factors for preventing opioid misuse and abuse and its relationship to ACEs. The applications were due in early November 2018 and funding is anticipated to be awarded in early January 2019. As of September 2018, NCIPC also was able to fund the National Network of Public Health Institutes (NNPHI) to support three local sites (Cincinnati, Cleveland, and Detroit) to align multiple sector organizations to implement prevention initiatives related to ACEs. These sites were chosen because they represent communities that are experiencing high rates of opioid misuse, overdoses, and deaths and have a strong readiness and capacity to implement comprehensive ACEs and opioid prevention strategies.

In November 2018, the Division of Violence Prevention (DVP) released an article that assessed the prevalence of ACEs across 23 states stratified by demographic characteristics, *Prevalence of Adverse Childhood Experiences From the 2011-2014 Behavioral Risk Factor Surveillance System in 23 States*, using the Behavioral Risk Factor Surveillance System™ (BRFSS™). This represents the largest and most diverse collection of ACEs data from the BRFSS™ data to date. The results showed that 1 in 4 people experienced at least 3 ACEs and described significant differences in ACEs exposure by racial, economic, education, and employment backgrounds. The findings highlighted the importance of understanding why some groups are at higher risk of experiencing ACEs than others, and how the increased risk may exacerbate health inequities across the lifespan and future generations.

Another study used the most recent data and updated methods to provide new estimates of the economic burden of CAN, *The economic burden of child maltreatment in the United States, 2015*. This study estimates that for each person in the US who experiences non-fatal CAN costs society approximately $831,000 over the victim's lifetime. DVP also developed a new ACEs online training, *Preventing Adverse Childhood Experiences*, for pediatric providers, mental healthcare providers, and other public health practitioners to help them understand, recognize, and prevent ACEs. The training is free and is available on NCIPC's VetoViolence® website and can be used for continuing education credits.

With the increase in appropriations, NCIPC also has been able to increase its staffing for the first time in a very long time. Since May 2018, NICPC has completed 67 recruitment actions (i.e., new staff on board). This translates to 53 permanent fulltime equivalents (FTEs) and a host of other contractors, fellows, and interns. This growth is anticipated to continue, with many more actions already in process. NCIPC is looking forward to having this new talent and energy, as well as the opportunity to help lessen the workload of some of the existing staff members. Over the last few months, some familiar individuals have moved into permanent positions. Elizabeth Solhtalab and Leslie Dorigo were serving in acting capacities. They are now in permanent positions as the Associate Director for Policy and Partnerships and the Associate Director for Communications, respectively. In addition, Dr. Chris Jones returned to the Injury Center as a Senior Advisor to Dr. Deb Houry and as the Director of the Office of Strategy and Innovation (OSI). In this role, he will work with the Executive Leadership Team on the three priority areas, develop strategies related to surveillance, and serve as a liaison to many federal agencies on CDC's behalf. Prior to returning to CDC, Dr. Jones has served in many senior leadership positions with HHS. CDC is thrilled to have him return.

In terms of the future, NCIPC continues to onboard additional staff. This translates to needing more staff and a host of all new operation systems. In addition, NCIPC will be announcing its new Data-To-Action Notice of Funding Opportunity (NOFO) for Opioid Overdose Surveillance & Prevention funding. This will be a 3-year, $840 million funding opportunity to support states, territories, and large city and local health departments that meet certain criteria. The 3 existing funded programs that are in the field currently will be rolled into one NOFO. The focus of this NOFO will be to obtain high quality, more comprehensive, and timelier data on opioid prescribing, morbidity, and mortality and to use those data to inform action in prevention efforts at the state and local levels. With funding from the Robert Wood Johnson Foundation (RWJF), DVP plans to adapt the Global Violence Against Children Survey (VACS) for use in the US. DVP anticipates launching a pilot Domestic VACS partnership with one state or local health department, with data collection beginning in 2020. To dae, 42 states and Washington, DC have included an optional ACEs module in their BRFSS, NCIPC is supporting 6 states to include the ACEs module in their 2019 BRFSS administration. NCIPC also plans to pilot ACEs and opioid misuse surveillance questions through an internet panel survey to provide better insight into trends in ACEs and the connection to opioid misuse over time. This is not currently supported by NCIPC's existing data systems. The insights gained through this survey could inform more effective and targeted prevention efforts. DVP is beginning to work on its first ever *Vital*signs™ for ACEs, which is expected to be released in Fall 2019. They are hopeful that this will have as much impact and reach as the suicide *Vital*signs™.

Discussion Points

Dr. Coffin commended NCIPC on the extensive amount of work it has undertaken with the increased funding and attention. He found the *Evidence-Based Strategies for Preventing Opioid Overdose: What's Working in the United States* to be an excellent publication. Others joined him in commending NCIPC on several excellent publications, the scale-up of the NVDRS, and the onboarding of new staff, and applauded CDC for the speed with which they were able to apply and utilize the increase in funding.

Regarding a request to comment on how programmatic priorities might be influenced by the results of the suicide analyses and the suicide and homicide analyses, **Ms. Peeples** said that NCIPC is looking across all three of the Center's priority areas to determine how to impact one another. Suicide is clearly an area of growth for the Center. NCIPC does not receive any direct federally-appropriated resources for suicide prevention, so they are trying to focus on this area

and gain visibility. They are considering how to leverage and utilize the resources they are receiving for opioid overdose prevention to help augment and support the work they are doing within ACEs and suicide prevention.

Dr. Frye pointed out that there are numerous policies and changes that are being generated that actually constitute ACEs, such as how transgender children are considered and treated and potential changes to the public charge, which would create food insecurity for immigrant children in the US. She encouraged everyone to think broadly about what an ACE is and suggested that as a board, they might want to consider advocating for and discussing a WG that would examine structural violence and institutional violence and how those types of policies and non-policies translate into ACEs. This is clearly within the purview of the research conducted by NCIPC.

Ms. Peeples said they would be happy to speak further with the BSC about that. The Division has been thinking very broadly about this issue, and is certainly open to feedback, recommendations, and suggestions from the BSC regarding this space.

Dr. Barnes congratulated NCIPC on the addition of all of the states to the NVDRS, and recalled 2002 when Maryland was the first state. She wondered how they got all of these states engaged, given that it had been so difficult previously, and who in the states is responsible. She had a problem in DC working with the Coroner, who did not want to be a part of NVDRS due to concerns about the information getting out. The police officers' position was that they did not want to add work for which they would not be paid extra. She also inquired as to how the connection is made between suicide and opioids, given that reporting can take time.

Ms. Peeples indicated that the funding is allocated primarily to the department of health within each state. However, this program involves an intense collaboration with many partners in the law enforcement community. NCIPC works intensively with the Chief of Police and other law enforcement agencies. They work with the Coroner/Medical Examiner (ME) system as well. A lot of work has been done to ensure confidentiality, as well as the speed and accuracy of how the data are received. Collaborations and partnerships take a long time, so what Dr. Barnes has observed is likely a reflection of that. In addition, some states have infrastructure challenges and NCIPC has had to work with them to determine how best to support them so that they could apply for the funding. To that end, the Center has made some modifications over the years to its NOFOs to allow states to begin by collecting data in a part of the state and then expand from there over time. NCIPC's grantees are highly collaborative in nature and like to help one another, so there is a Learning Collaborative that is comprised of the states to help everyone problem-solve and figure out solutions that work rather than duplicating efforts. In terms of the connection between suicide and opioids, unique about the NVDRS system is that it collects data from multiple sources (ME reports, law enforcement, and other sources). It helps NCIPC understand the circumstance around the death itself. From the circumstance-related data, the Center can better isolate and identify exactly what happened related to a particular death. However, the Center does not change the documented cause of death (COD) on the original source of data.

Dr. James Mercy, the Director of DVP, added that they have had the luxury of receiving a great deal of support from external partners to help garner the increased funding so that NCIPC could reach all of the states. Lack of sufficient funding to support the states to collect these data has been an impediment. The last 10 states are likely to have unique challenges in collecting these data. The biggest challenge regards how to provide the technical assistance (TA) the states need to collect these data and continue the success of this system. State health departments

such as Maryland already have demonstrated the value of these data by applying it in various ways to prevention strategies and approaches, which has helped NCIPC a great deal in making a case for the value of this system. Regarding Dr. Barnes' inquiry about how the connection is made between suicide and opioids, Dr. Mercy explained that the NVDRS does not collect any new data. It links data from law enforcement records, Coroner/ME reports, and death certificates. Linking those data provides a much richer picture of the circumstances of these deaths,. Basically, opioid overdose could be one of three CODs. It could be an unintentional overdose and would be classified as such on the death certificate. It could be undetermined whether the death is unintentional or perhaps due to suicide attempt, for example, because the death investigation does not reach a determination about the COD. Or, it could be deemed suicide because it was evident from the death investigation that the overdose was intended to take a person's own life. NCIPC is able to document that in the system and add to that rich information about the circumstances to help understand in more depth what the nature and issues are related to the CODs.

Dr. Baldwin, Director of the Division of Unintentional Violence Prevention (DUIP), added that drug specificity in overdose deaths continually needs to be improved. Therefore, some of the funding being allocated to states through the cooperative agreement mechanism is supporting Coroner/ME capacity to have improved drug specificity as part of understanding that social autopsy. For public health and/or public safety to respond, drug specificity is needed to understand the patterns occurring within the field. DUIP leverages the NVDRS platform. Some of the circumstances could include information such as whether an individual recently was incarcerated before their death, their prescribing history in the 6 months to a year proceeding their death, whether they were in long-term recovery and relapse, et cetera. All of those things identify gaps and opportunities that NCIPC can address within public health and their colleagues across the federal, state, and local landscape to further mitigate the problem.

Dr. Kaplan said that every time he hears the word "circumstance" in connection to the NVDRS, he has to say that when "yes" is checked as the circumstances, that means that the preponderance of evidence seems to point to that. Thus, "yes" is probably a true "yes." However, it is unknown what "no" means. They could be missing data or a true "no." Perhaps NCIPC needs to do a better job of encouraging not to overuse "circumstances." There are limitations to what can be done with the circumstances, but he heard the word "circumstances" mentioned multiple times in the brief discussion they had had thus far. This is a caveat that needs to be addressed. He was at the Joyce Foundation for a meeting that was organized by the American College of Preventive Medicine (ACPM) that assembled representatives from various states who are working with their state VDRS. They are engaged in very creative efforts linking the NVDRS or the state VDRS to other data sources. The word "circumstance" arose in that meeting as well. There has been an effort to bring more breadth to the NVDRS, but there has been an absence of depth in how it has been approached. The circumstances are extremely valuable, but there are a lot of questions about validity of the data and what is missing and what "no" means. While he did not know what could be done about this, more resources need to be directed at addressing this serious problem.

Ms. Peeples responded that NCIPC is considering providing additional training to abstractors to try to better analyze the circumstance-related data that are available.

Dr. Compton expressed his appreciation for NCIPC's work to improve the reporting of the COD and the attribution of whether it is intentional or unintentional as a way of looking at the overlap of suicide and unintentional overdose deaths. This has been of major interest. There are known inaccuracies in all of the data systems. The National Institutes of Health (NIH) and the National Institute on Drug Abuse (NIDA) are happy to use their research resources to help support this effort to determine novel ways to improve the reporting and data systems. A handful of their researchers are working on this and will be happy to collaborate further with NCIPC.

Dr. Comstock observed that NVDRS is a perfect example of how one well thought out and well-implemented system can address multiple injury and violence issues. She inquired as to if/how CDC is thoughtfully applying the opioid funding to address as many injury and violence topics as possible. For example, is the opioid money being allocated to the Tribal Epidemiology Centers for opioid addiction also addressing alcohol addiction? Is the opioid funding being allocated to suicide prevention that addresses means restriction also addressing firearm means restriction? She also suggested that in the next NOFO, perhaps applicants could be encouraged to think more broadly than just opioids.

Ms. Peeples replied that initially the focus has been to utilize the data systems that they have at their disposal, given that they had to allocate the funding as fast as possible. Certainly, NCIPC would be interested in being able to utilize that to help with other topic areas as the Center's capacity builds over time. She called upon Dr. Baldwin to speak further about the work he touched upon earlier about how NCIPC is using the NVDRS system to leverage some of the work the Center is doing in the opioid space.

Dr. Baldwin added that NCIPC believes there are some economies of scale that can be realized by leveraging existing platforms, as Ms. Peeples pointed out. What they are doing sits within the broader CDC footprint of surveillance activities in this case. As a specific example, one component of the ESOOS program is the syndromic morbidity data. Through some of the funding that DUIP is providing and some of the supplemental ORCU-funded projects, they are improving the number of Early Notification of Community-based Epidemics (ESSENCE) reporting hospitals. That has a benefit not only for NCIPC in terms of its work in overdose prevention, but also for all syndromic surveillance that CDC is conducting because more hospitals are being brought on board. Another specific example is that Coroners/MEs are historically under-supported. Upwards of 20% of NCIPC's dollars will be allocated directly to Coroners/MEs. That has a benefit not only within the context of drug overdose, but also has a larger infrastructural benefit. One of the ORCU projects is focused on providing reference materials, methodologies, and calibration standards for testing of fentanyl and fentanyl analogues. Upwards of $9 million of the OPIS-S2 funding was allocated to build out laboratory capacity, which includes purchasing mass spectrometry (MS) and other advance laboratory instrumentation. To Dr. Comstock's point, NCIPC is trying to think very intentionally about how the Center can help build broadly the public health capacity. To the extent that there are natural touch points into other major public health challenges, he thinks that is a win for everyone.

Dr. Liller indicated that Florida is one of the new states to receive the NVDRS funding. The University of South Florida is being contracted with the state to help them in the process of hiring the abstractors who will be housed at the university. In terms of opioids and working with the NVDRS, because they have had the opioid funding in the state, they have already reached out to the individuals and groups that the university also will want to reach out to with the NVDRS. The university is collaborating directly with the state now in the process of reaching out to law enforcement, Coroners/MEs, et cetera. They are just beginning, but all the reltionships formed thus far have been excellent..

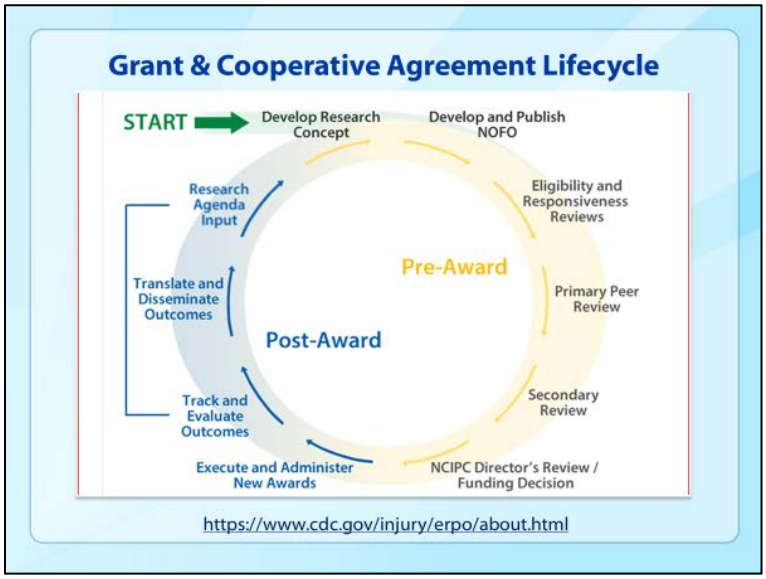
Dr. Baldwin indicated that in the context of the Data-to-Action NOFO and ERPO-funded projects, NCIPC anticipates continuing to see partnerships between state and local public health and resident academic center to marry the expertise of the two.

Extramural Research Program Office (ERPO) Update

Mildred Williams-Johnson, PhD
Director, Extramural Research Program Office
Office of the Associate Director for Science
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. Williams-Johnson provided an overview of ERPO, FY 2018 extramural awards, NCIPC's portfolio, and FY 2019 funding opportunities. The NCIPC ERPO is the focal point for the development, peer review, and post-award management of extramural research awards for NCIPC, NCEH, and the Agency for Toxic Substances and Disease Registry (ATSDR). The ERPOs were formally established as a separate organizational unit across the CDC in the early 2000s in response to a directive from HHS to standardize processes and procedures for extramural research; ensure that the research funded is of the highest quality and merit and meets the stated research goals; and in so doing support the integrity, transparency, and credibility of the agency's extramural processes. The NCIPC ERPO works collaboratively with center divisions, the Office of Grant Services (OGS), and CDC Administrative Offices.

As ERPO describes it, they manage extramural research projects from cradle-to-grave. ERPO develops, plans, coordinates, implements, monitors, and evaluates extramural research that is designed to address Center priorities. This graphic depicts the work that ERPO does in partnership with division scientists and other parts of the agency:



This graphic of the project lifecycle represents updated information that is now on the internet, which ERPO was able to do in 2018 in collaboration with the Office of Communications. On the website, one can hover over each step in the life cycle for helpful information.

Some of the activities performed in the ERPO program were designed specifically to enhance the strength of the program and how the program works with its partners. For example, they conducted a peer review survey of several hundred external reviewers who participated in Special Emphasis Panels (SEPs) to assess their peer review experience. Some of the questions pertained to the reviewers' perspectives as a scientist at the table reviewing the applications regarding how well the panel was constituted, how well the science expertise was represented for reviewing the applications, whether every application received a fair hearing and adequate time, and whether they would participate in an NCIPC peer review again. Sometimes the peer reviews are intense.

They recently finished the Injury Control Research Center (ICRC) review for which they put in some very long hours. Also in 2018, the reviewer and advisory database was enhanced. This database was built over the last couple of years to quickly identify the reviewers needed to assess and critique the scientific and technical merit of an application. That resulted in the ability to identify an additional 500 potential peer reviewers. In addition, reviewer recruitment strategies were greatly expanded such that now there is good turnover in the number of people participating in the reviews, as well as introduction of new reviewers from new universities to the review process. Through these and other activities, ERPO has been able to significantly enhance the quality and results of the peer reviews and have good data to inform this process. Feedback from the surveys can be implemented in the next cycle.

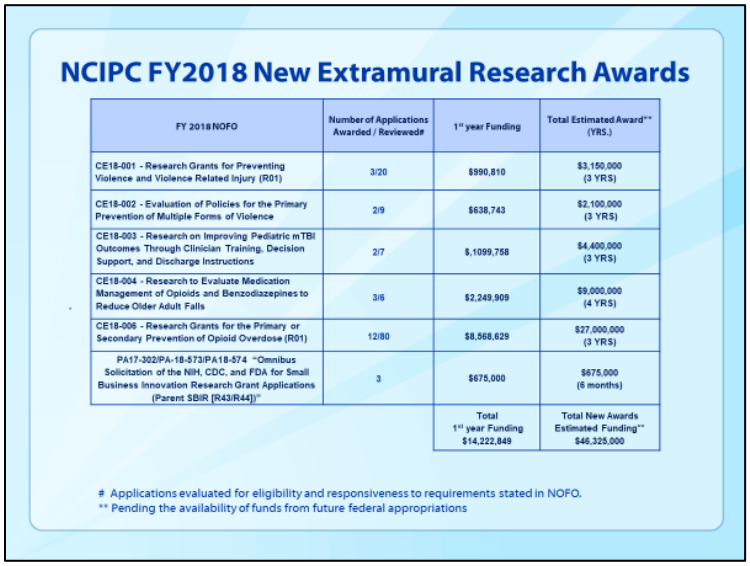
These are the NCIPC research priorities, the majority of which were addressed by new FY 2018 extramural research awards:

- ❑ Opioid Overdose Prevention
- ❑ Adverse Childhood Experiences
- ❑ Youth Violence
- ❑ Sexual Violence
- ❑ Motor Vehicle Injury
- ❑ Traumatic Brain Injury and Youth Sports Concussion
- ❑ Intimate Partner Violence
- ❑ Cross-Cutting Strategies for Preventing Multiple forms of Violence
- ❑ Self-Directed Violence
- ❑ Older Adult Falls

FY 2018 was a very robust year, especially since the first R01 was introduced for opioid research. It is very exciting to have that particular funding and to conduct some extramural research in that area. There was a significant improvement in the number of applications that were selected to move forward for peer review. The NOFOs were greatly improved to reduce the number of applications that would be deemed non-responsive and turned back to the applicant. Although they have not been able to fund as many applications as they would like based on the available resources, the number of non-responsive applications has been reduced to as low as zero in some instances. There was only one instance in which approximately 25% of the applications were considered to be non-responsive.

The following table delineates the NOFOs that were published and awarded in FY 2018. What is not represented on the table is the ICRC NOFO that also was published in 2018 to enable those applications to have a good 6 months to develop their applications. The applications were not due until the end of 2018, and the peer review of those applications was recently completed: This year's funding for NCIPC's extramural research portfolio is over $14 million, with a sizeable

contribution from the opioid portfolio. Over the years of these awards, almost $50 million is expected to be added to NCIPC's portfolio in extramural research funding:

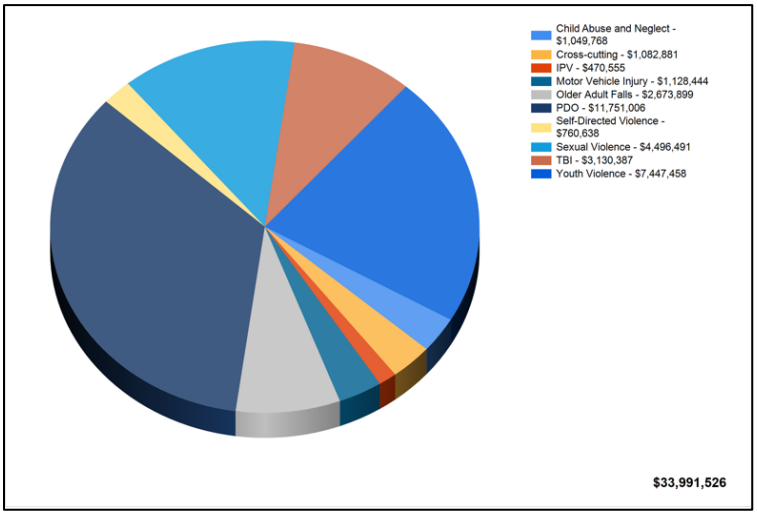


NCIPC FY2018 New Extramural Research Awards

FY 2018 NOFO	Number of Applications Awarded / Reviewed#	1st year Funding	Total Estimated Award** (YRS.)
CE18-001 - Research Grants for Preventing Violence and Violence Related Injury (R01)	3/20	$990,810	$3,150,000 (3 YRS)
CE18-002 - Evaluation of Policies for the Primary Prevention of Multiple Forms of Violence	2/9	$638,743	$2,100,000 (3 YRS)
CE18-003 - Research on Improving Pediatric mTBI Outcomes Through Clinician Training, Decision Support, and Discharge Instructions	2/7	$,1099,758	$4,400,000 (3 YRS)
CE18-004 - Research to Evaluate Medication Management of Opioids and Benzodiazepines to Reduce Older Adult Falls	3/6	$2,249,909	$9,000,000 (4 YRS)
CE18-006 - Research Grants for the Primary or Secondary Prevention of Opioid Overdose (R01)	12/80	$8,568,629	$27,000,000 (3 YRS)
PA17-302/PA-18-573/PA18-574 "Omnibus Solicitation of the NIH, CDC, and FDA for Small Business Innovation Research Grant Applications (Parent SBIR [R43/R44])"	3	$675,000	$675,000 (6 months)
		Total 1st year Funding $14,222,849	Total New Awards Estimated Funding** $46,325,000

Applications evaluated for eligibility and responsiveness to requirements stated in NOFO.
** Pending the availability of funds from future federal appropriations

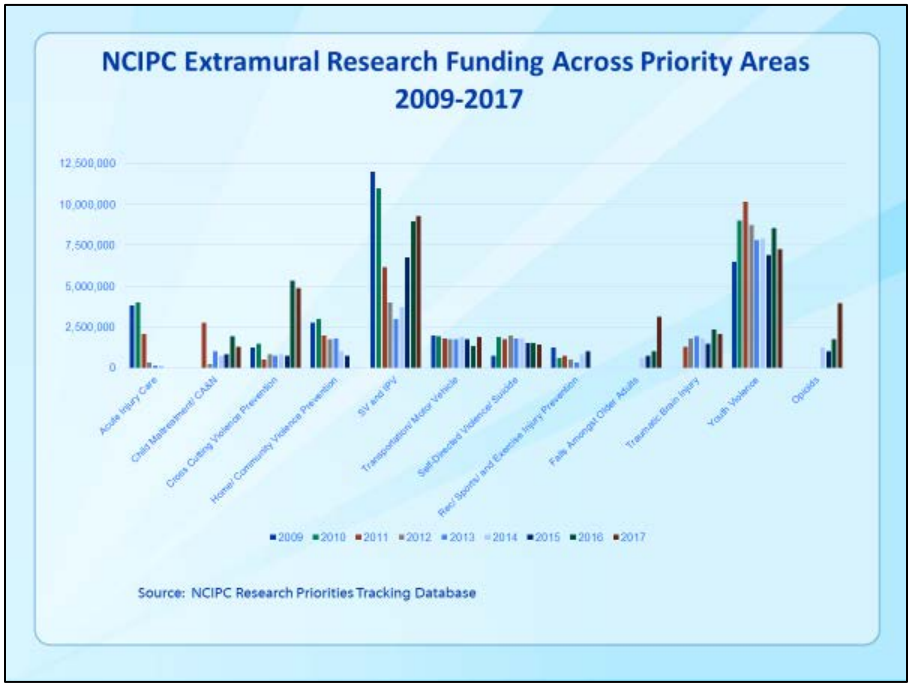
This pie chart represents how the funds are dispersed across all of the research priority areas listed earlier:



Source: NCIPC Extramural Tracking System

As of this year, the portfolio has grown considerably with over $30 million in extramural research portfolio funding currently. A good portion of that is the opioid research, but a sizable number of projects are funded for CAN (the old terminology for ACEs). In terms of NCIPC's historical extramural research funding across fiscal years 2009-2018, funding has increased substantially over the last several years. The good news is that NCIPC is still steadily putting forth as much of those dollars for extramural research as they are proportionally for some of the Center's other activities.

NCIPC is very excited about bringing online its new Research Priorities Tracking Database, shown in the following graphic, which enables them to see historically what the portfolio has looked like over the years for all of the Center's priority areas:



The 2018 data are not yet represented here, given that it takes a while for those data to populate from one system into the Research Priorities Tracking Database. It is easy to see that opioid research greatly increased in 2017. It grew even more in 2018 and will continue to do so in 2019. The Center was doing work in this area before receiving substantial appropriations. It is important to note that where NCIPC is placing its emphasis for the programs does not always reflect the money. For instance, all of the work on self-directed violence addressed in the *Vital*signs™ report reflects all of the work the agency has been able to do in programs and extramural research over a substantial number of years. NCIPC has been fairly steadily supporting this research effort, even though there is not an appropriation line for suicide.

FY 2019 NOFOs forecasted on www.grants.gov include the following:

- ❑ CE19-001: Injury Control Research Centers
- ❑ CE19-002: Research Grants to Identify Effective Strategies for Opioid Overdose Prevention (R01)
- ❑ CE19-003: Evaluation of Return to School Programs for Traumatic Brain Injury
- ❑ CE19-004: Etiologic and Effectiveness Research to Address Polysubstance Impaired Driving
- ❑ CE19-005: Research Grants for Preventing Violence and Violence Related Injury (R01)
- ❑ CE19-006: Grants to Support New Investigators in Addressing Cross-Cutting Violence Prevention and Opioid Overdose Prevention

CE19-001 are the ICRCs for which the review was conducted in 2018, which will be funded in 2019. The ICRCs represent NCIPC's most significant investment in extramural research programs. This is the Center's sentinel program for research to practice in terms of having the research, outreach, and training activities to reach state partners and local health departments and inform state legislatures and local officials of what the science says, what the best strategies are for preventing injuries and violence, and how that can be used for developing policies to reduce the public health burden. All of these NOFOs have been forecasted and NCIPC is very close to publishing a number of them such that there will be an approximately 90-day period during which the applications can be developed and submitted. The secondary review will be convened in the July 2019 timeframe for the BSC to discuss the most meritorious applications for addressing the research put forth in these program areas, and provide their recommendations for what should be funded.

Discussion Points

Dr. Comstock inquired as to whether the NCIPC ERPO manages directed contracts, and if there will be an attempt to try to fund at least one ICRC somewhere West of St. Louis. In addition, she congratulated NCIPC on bringing back a new investigator award. Those awards are so important for helping people get started in careers in injury and violence prevention.

Dr. Williams-Johnson responded that while some CIOs have a role to manage contracts, the NCIPC ERPO does not. The NCIPC ERPO manages grants and cooperative agreements. They may have contracts for Small Business Innovation Research (SBIR), but do not have those at this time. In terms of funding an ICRC West of St. Louis, NCIPC is very concerned about the natural reach of the ICRCs. As a part of that NOFO, the ability to establish a meritorious Center West of the Mississippi was included. She expressed appreciation to their partners in DVP and DUIP for supporting ERPO in putting forward the new investigator awards.

Dr. Franklin requested further information about what comprises the cross-cutting strategies for preventing multiple forms of violence. He applauded the Center for engaging in the work pertaining to ACEs, which is very important work in injury and other areas. Given the importance of the association with ACEs and injurious events, he wondered whether there had been any consideration and discussion of assessing adverse life experiences versus just those related to childhood.

Dr. Williams-Johnson explained that because there are so many different risk factors for different forms of violence that may be the same risk factor for sexual violence (SV), intimate partner violence (IPV), and/or youth violence (YV), the idea is to look at what those risk factors are and whether those risk factors and interventions that address them also can impact the different forms of violence. When ERPO published the NOFOs this year, they included an R01 grant as well as a policy grant to examine how well those particular strategies can impact more than one form of violence.

Dr. Tom Simon, DVP Associate Director for Science (ADS), mentioned that NCIPC has a published research agenda that indicates priorities and key gaps in each topic area. For the first time in this research agenda, there is an entire section dedicated to cross-cutting violence prevention. This highlights the fact that the strategic vision for DVP is to make greater use of the underlying risk and protective factors that are relevant to multiple forms of violence, and to capitalize on opportunities for intervention strategies that address those underlying risks. For example, ACEs are a great example of an underlying factor that is relevant to multiple forms of violence.

Dr. Greenspan added that to develop the NCIPC research agenda, the ADSs and scientists throughout the Center pulled together research priorities in all of NCIPC's areas. The *CDC Injury Center Research Priorities* document, which examines each of the research priorities for the Center, is available online.

In terms of Dr. Franklin's question regarding adverse life experiences versus just ACEs, **Dr. Mercy** indicated that they recently had a presenter who is examining adverse experiences in adulthood. In his examination of these issues, he found that they have some of the same consequences in adulthood as in childhood. Given that childhood is a very sensitive period of development, NCIPC is acutely concerned about that age range in particular and that is the Center's greatest emphasis currently in the ACEs area.

Dr. Liller inquired as to the age/grade range for the funding opportunity for return to school programs for traumatic brain injury (TBI).

Dr. Williams-Johnson responded that for that NOFO, the age/grade range is elementary and high school.

Dr. Hedlund observed that there is a large list of research priorities that NCIPC would like to award, but there is only a limited amount of funds in any given year. With that in mind, he asked whether there is a process in place to determine how NCIPC is going to allocate funding across the various priority areas.

Dr. Williams-Johnson replied that the divisions sponsor the awards, so ERPO works with them in terms of what is coming offline for any given year. Funding may be for 2 to 4 years depending upon the activities. The divisions have strategic plans that they use as part of guiding their program activities. One of the jobs ERPO is trying to bring online and do more of is to provide information to the divisions on the outcome of the research that already has been funded, and how that information should inform next steps.

Ms. Peeples added that in addition to that, there is a research set-aside that comes off of each line that has an appropriation that helps support that activity within ERPO. The research has to be true to the appropriation funding.

Dr. Williams-Johnson said that the divisions support a great deal of research that is over and above the set-aside amount.

Dr. Baldwin added that another thing they attempt to do is bridge across topical areas. For example, in the older adult fall area, they are looking at medication management that cuts across opioids and benzodiazepines, and the projection for 2019 on polysubstance use and impaired driving. This leverages dollars received under a certain appropriation to build out research in other areas.

Referring to the Grant & Cooperative Agreement Lifecycle graphic, **Dr. Austin** asked whether the BSC is involved in the lifecycle in any other place than the secondary review.

Dr. Williams-Johnson replied that one of the primary roles for the BSC is in the secondary review and providing recommendations to the NCIPC Director for what will be funded. As a part of providing information to the BSC, NCIPC always presents the program activities from the

division perspective on a given topic area. That includes information about what the research focus has been, so the BSC also provides input on that aspect.

Dr. Tamara Haegerich, ADS in the DUIP, reported for new members and reminded existing members that an opioid research portfolio review was presented during the last NCIPC BSC meeting to share with the board the successes of the past 10 years in opioid research, try to identify where to go next, and determine whether the priorities need to be updated given the rapidly changing nature of the epidemic. She would see that as the BSC assisting in providing that research agenda input in that they asked the BSC for suggestions. They appreciated all of that feedback, synthesized it, and are moving forward with the priority-setting process internally. As a follow-up to that, they have developed an internal WG that is going to be meeting shortly and the BSC's input will inform the next iteration of priorities, at least in the opioid space.

Dr. Greenspan added that NCIPC typically evaluates its research programs on a periodic basis. When they do that, they go back to the BSC with those reports and usually have outside expert input that also feeds into those reports, and obtain recommendations from the BSC in terms of moving forward. Those who are new on the board will be seeing that piece of NCIPC's evaluation of its research portfolio and programmatic scientific portfolio moving forward. Another important piece is that the BSC also serves in the secondary reviews after the primary peer review in order to provide recommendations in terms of programmatic priorities.

Dr. Frye observed that a lot of the work on SV prevention has been conducted on campuses that are not urban commuter campuses. Speaking to the opportunity to influence the research agenda, she wondered whether there is interest in or recognition that there is a very large population in urban centers that currently do not have specific SV prevention program research being done with them based on the literature and knowledge of what is being funded. She also noted that the NIH does not fund sexual or partner violence research unless it is associated with another priority area for NIDA or National Institute of Child Health and Human Development (NICHD) related to reproductive health outcomes, HIV/STI outcomes, or drug use outcomes. CDC is really the only source of funding for IPV and SV as standalone and important in their own right research areas. Second, there recently has been more reporting of racial and ethnic disparities and success rates and success rates for sexual and gender minority applicants for research grants. This is primarily coming out of analyses of NIH-funded projects. Dr. Frye inquired as to whether CDC has performed an analysis of this. Third, she was intrigued by the large funding dip in SV and IPV over time.

Regarding the question about commuter campuses, **Dr. Williams-Johnson** said she did not think they had any specific research projects that direct efforts at commuter college populations. However, she believes they have a research project that involves multiple universities that might be reaching that population to some extent. She said the point was well-taken and that population will be considered moving forward in terms of targeted research efforts. They do not have racial and ethnic disparities data yet, because they will have to go into each application to determine how applicants self-identify. In terms of resources and staffing, that is information they would like to have. They want to know how well they are reaching the communities that are disproportionately impacted, and whether they are reaching investigators who work within those communities. There is some dialogue underway between ERPO and division staff regarding what they can do to better reach those investigators and populations in future opportunities. One of the first ones they are talking about are the Youth Violence Prevention Centers (YVPC) that will be redone and how they might increase the pool for those applicants.

Regarding the questions about the funding dip in SV and IPV, **Dr. Mercy** indicated that they would have to go back to look at that to understand what occurred. There are many gaps in SV and IPV research. The non-college population for example is not understood and well-researched. NCIPC is aware of these gaps and would like to better address them. They do have some activities that do reach commuter campuses as part of larger projects. Racial and ethnic disparities in violence are very important to NCIPC. For example, their dating violence work has been targeted at high risk populations which are primarily African American and Hispanic populations in cities.

Ms. Peeples added that the dip in SV and IPV mirrors the funding appropriations for those years. There was a decline for a few years, followed by an upswing. Although they received an increase in that topical area, it was specific to the RPE program. While they have seen an increase in SV resources, they have been very targeted. This limits NCIPC's flexibility in terms of how they allocate those funds.

Dr. Comstock said she thought one of their roles as BSC members is to provide their input and expertise about where they think the future direction of the NCIPC research agenda should go. She reiterated how disappointed she is that firearm research does not have a specific topic line on the graph. She strongly recommended that CDC consider having specific line items for firearm research in the future. With all due respect, Dr. Houry's previous response to her comment that NCIPC is doing firearm research within several of those other topics is exactly as applicable to opioids. NCIPC is conducting opioid research within several other topics, yet opioids has its own individual line. Once again, she strongly recommended that CDC needs to specifically address firearms as an independent injury and violence prevention topic of incredible need in this country.

Dr. Kaplan seconded Dr. Comstock's point. Every year they hear that over 50% of all suicides are attributed to firearm use. Yet, there are limitations on what they can do, say, and fund. The fact is that little headway is going to be made on the issue of suicide prevention unless the issues revolving around firearms are addressed.

Dr. Coffin also supported Dr. Comstock's suggestion. In terms of opioids, he wondered whether some of the future research priorities should roll in stimulant overdose as well as opioid overdose, given the tight correlation between those drugs and the escalating rates of cocaine and methamphetamine mortality and the huge question that exists with regard to what stimulant deaths represent. The ME data demonstrates that a significant proportion are cardiovascular or cerebrovascular deaths, but a lot of them are actually of unknown etiologies. There are a lot of research questions built in there, and he wondered if the Center might be able to craft some NOFOs that are able to address stimulant mortality.

Dr. Baldwin replied that in their programmatic work, they are beginning to conceptualize what they are doing in the opioid space to the extent they can. They are guided by their Congressional appropriation to think more holistically. The Data-to-Action NOFO has an intention effort to be responsive to exactly what Dr. Coffin identified. To the extent that NCIPC's prevention and response activities can map to that overlap as well, they want to address as well. They will lean in the research agenda that Dr. Haegerich highlighted earlier, but he is certainly personally open to it and the field would welcome the opportunity to broaden what is being covered to the extent they can convince their appropriators that it is still responsive to Congressional intent.

Ms. Peeples added that the firearms issue is a tricky space for NCIPC, though it is a space in which they have an interest. She highlighted a few publications that NCIPC released over the past year that utilized the NVDRS system where they could assess firearms as relates to other topical areas such as suicide. They will continue to utilize NVDRS and other datasets to do those analyses. They will look to Congress and the administration to give them more direction, flexibility, and latitude within that space.

Dr. Liller indicated that she is working with a group now on a gun violence research consortium and conference, and they were looking at different funding sources for firearms. They said that the NIH has now allocated some funding for firearm research and mentioned a couple of projects. She wondered whether CDC would follow suit perhaps in 2020.

Ms. Peeples deferred to Dr. Compton to comment about NIH's research, but pointed out that appropriation language is somewhat different for CDC due to historical reasons, and CDC has more restrictions on them in that space. They do not have restrictions against them to conduct research per se. Where they feel like they have clear lanes and guidance, they have been "dipping their toes in the water" so to speak to conduct more of that type of research. There are other agencies and other departments that have more flexibility than CDC has currently.

Dr. Compton said there are two places to look at NIH for specific funding announcements, but encouraged them to remember that most of NIH funding is allocated to investigator-initiated projects that are submitted without a specific topic in mind. The access parent funding announcements that allow any important research topic to be evaluated and considered for funding.

CDC Foundation and Examples

Mr. Rob Abraham
Senior Advancement Officer
CDC Foundation

Mr. Abraham expressed his appreciation for the invitation to speak to the NCIPC BSC about the work that the CDC Foundation does in supporting CDC and shining a light on CDC's important work. He provided information about who the CDC Foundation is as an organization, explained what they do and how they operate, and shared some examples of projects CDC Foundation has supported across CDC in addition to what they are working on currently within NCIPC. In short, CDC Foundation builds partnerships with CDC. Many times, these are partnerships that CDC cannot build alone or that private sector entities cannot engage in with a federal agency by themselves. The Foundation acts as a liaison and forges these partnerships to support CDC's public health work and ideally create a greater impact.

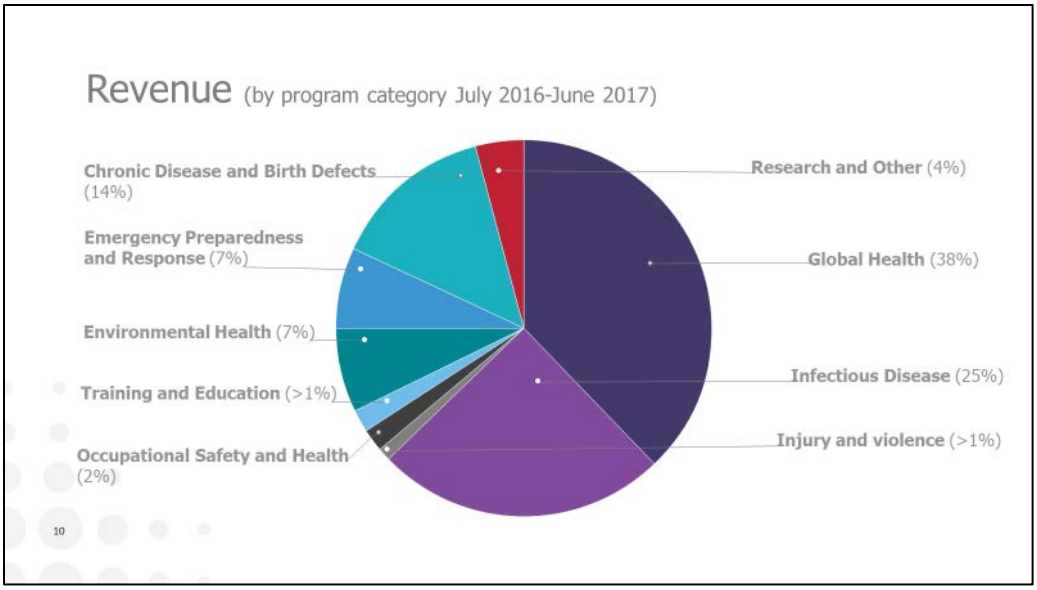
The CDC Foundation was established by Congress in 1992, based on ideas and conversations led primarily by Dr. Bill Foege, as an independent 501(c)(3) nonprofit organization. While CDC is in the name of the foundation, it exists independently from the agency. The CDC Foundation maintains a very strong relationship with CDC. Though established in 1992 by Congress, operation did not begin until 1995. Since then, the CDC Foundation has provided close to $800 million in private sector support for CDC's work and has launched about 1000 programs across the world. Most importantly, the foundation has built a network of individuals and organizations who are primed and ready to participate with CDC through financial contributions, in-kind contributions, or provision of other expertise.

To provide an idea of the scale of the work, the foundation managed over 300 CDC-led programs in the US and in more than 130 countries last year. As people become more directed with their philanthropic giving, CDC Foundation is very interested in where their money is going and how the foundation is being good stewards of donor dollars. The CDC Foundation has received Charity Navigator's highest rating of 4 stars for 13 years in a row. Only about 1% of charities receive 4 stars for this number of consecutive years, which is a reflection of the foundation's own internal operations, how they take care of their donor dollars, and how they execute that from an operational standpoint.

Of course, the CDC Foundation's biggest and best partner is CDC and they are building partnerships across the agency. But they also build partnerships between CDC and individuals, foundations and large philanthropies, private sector corporations and businesses, nonprofit organizations, educational institutions, and even other government agencies in the US and internationally. At a glance, some supporters and donors have included: Abbott, Aetna, ALCOA Foundation, American Chemistry Council™(ACC), AMGEN®, Australian Government, Department of Foreign Affairs and Trade, Bayer HealthCare, BD, Bill & Melinda Gates Foundation, Boehringer Ingelheim, Booz | Allen | Hamilton, Bristol-Myers Squibb, Cargill™, CDC Federal Credit Union (CDC FCU), Conrad N. Hilton Foundation, Doris Duke Charitable Foundation (DDCF), ExxonMobil, Fidelity Charitable℠, GAVI Alliance, GE Foundation, Genetech, GILDEAD, GlaxoSmithKline (GSK), Global Alliance for Improved Nutrition (GAIN), Hewlett Packard (HP), Kaiser Permanente®. Kimberly-Clark, Lilly, MERCK, Motorola, National Business Group on Health® (NGBH®), OnStar, OraSure Technologies, P&G, PATH, Pfizer, Roche, Robert Wood Johnson Foundation (RWJF), Sanofi Aventis, Silicon Valley Community Foundation® (SVCF®), Southern Company, Starbuck's, Susan G. Komen for the Cure, Target, The Annie E. Casey Foundation, United Parcel Service (UPS), Vanguard Charitable, W.K. Kellogg Foundation, and the World Health Organization (WHO).

In terms of where the CDC Foundation's funding comes from, it is not an endowed foundation and actually fund raises project-by-project specifically. When CDC comes to them with a need, there often is value in financially supporting a pilot that may not yet have federal appropriation, but they are trying to make the case in the future that it is worthy of that. Or, perhaps it is for an area that is currently under-funded by federal appropriations. There is an internal process within CDC to build out a project concept outline and develop a partnership model that is supported by the CDC Foundation. From there, the CDC Foundation works with its contacts and with other CDC contacts. There is a very rigorous vetting process to approve any of the partnerships or dollars that the CDC Foundation is activating. The largest amount of revenue being brought in to support CDC's work is coming from foundations, corporations, and other nonprofit organizations. Between July 2016-June 2017, the breakdown was as follows: Board/Staff (>1%), Corporations (22%), Epidemic Intelligence Service (EIS) Alumni (>1%), Foundations (36%), Organizations (37%), Other Individuals (1%), and US Government Agencies (4%).

On average year to year, depending upon whether there is a large emergency operation the CDC Foundation is supporting or the needs of CDC are depending upon an ebb and flow of federal funding, the foundation raises between $60 to about $120 million annually. That seems like a small amount, but the foundation is able to do a lot with these funds to serve as a catalyst for efforts that perhaps federal dollars cannot support. While this chart changes slightly from year to year, the CDC Foundation's programs cover the breadth of CDC's public health protection work, both in America and across the globe:



Historically, the CDC Foundation has had a larger presence in building partnerships across chronic disease, global health, and infectious disease priorities. Mr. Abraham said he personally hopes to grow the smaller slice of injury and violence of >1% a lot more. They have a team of about 4 frontline fundraisers that support the entire federal agency. Within his personal portfolio, he supports everything non-communicable. This includes chronic, injury, environmental, birth defects, and a few others. They have managed to make good friendships within NCIPC over the last couple of years, and have some really exciting work growing out of the Center.
In terms of how the CDC Foundation builds partnerships, it is important to understand that they do not look for the quick wins that are very transactional in terms of receiving a donation, putting that donation to work, and just getting it out the door. There is not a quick return on investment or prioritizing for donors or investors. The CDC Foundation is working to build sustainable, strategic relationships where the foundation can help steer private sector and philanthropy in accordance with the needs and priorities of CDC. Part of the balance there is that they see increasingly that donors are becoming very directed with their giving. Work happens where funding is allocated. They are trying to avoid donors driving the work. Instead, they are trying to engage in strategic partnerships with donors wherein expertise across the agency can help to influence, steer, and educate donors to guide what the priorities should be. By serving as a strategic implementing partner, the CDC Foundation effectively manages a wide range of collaborations between CDC and others, enabling CDC experts to focus on the science. These collaborations range from standard programs to complex, multi-partner initiatives. One lesson learned is that it takes time to explore partnerships, collaborate, and drive up a mutual interest.

This is accomplished by drawing on more than two decades of complex program management and applying best practices from this experience to each initiative for greater impact and outcomes. In the CDC Foundation's work with programs and CDC, the CDC Foundation is able to budget and deploy funds, recruit and hire staff and consultants, oversee capital improvement projects, secure and mobilize equipment, and engage in ongoing dialog with all partners. In this respect, the CDC Foundation's seasoned program professionals keep all invested parties informed about progress and report on achievements, high-impact outcomes, lessons learned and opportunities for ongoing research and collaboration. In doing this work, the CDC Foundation has developed criteria of what they deem to be good partnerships and what they look for and hope to build across these partnerships. Good partnerships maximize relevance,

minimize complications, encourage participation, provide flexibility, emphasize outcomes, and require communication.

Mr. Abraham shared a few examples of some of its work between CDC and philanthropies and private-sector organizations and how the CDC Foundation adds value to amplify impact. As a nonprofit organization, the CDC Foundation is flexible and is able to function oftentimes faster than a government agency and with a little less "red tape." They also are able to combine a diversity of revenue streams rather than being dependent upon one entity for funding. Instead, they have a variety of partners and can grow those partnerships as needed. Some best examples of that exist in recruiting and hiring staff and consultants. For many of the projects the CDC Foundation supports in partnership with CDC, it can be difficult to get new staff on the ground, especially when hiring project-specific staff. The CDC Foundation can do that. For example, the CDC Foundation is currently engaged in hiring and staffing about 80 field staff across the country in response to the opioid epidemic. These are frontline individuals who are supporting local departments of public health that have received funding from CDC, but do not have the capacity to implement this or source and hire many of the administrative or technical staff to support this work. The CDC Foundation is able to quickly source, hire, onboard, and put staff on the ground. Another difficulty CDC often faces is travel, which the CDC Foundation can do pretty easily and even at the last minute if there is a need within a project to get "boots on the ground" quickly.

One example is an effort in which the CDC Foundation partnered with CDC's Division of Population Health and RWJF on a first-of-its-kind data analysis for the 500 largest American cities to identify, analyze, and report data on 27 chronic disease measures. Providing the best available data to health officials and community leaders helps cities develop and target solutions to address some of the nation's most pressing health challenges. RWJF seeks to invest in building a culture of health and CDC had expertise, a need, and the desire to be able to measure chronic disease at a local level. The data resulting from this analysis are provided free of charge to any other organization, nonprofit, department of health, et cetera to have a tailored view of what is happening in "their own backyards." This is a great example of RWJF having a commitment to sustainability among their programs, and CDC has expertise in the data and science. Making those data and the science available to organizations at the ground-level that can utilize them to build programs that are tailored to their own communities empowers local communities to step-up and take a more tailored approach to dealing with public health interventions locally. There is an interactive map on CDC's website, which will allow for the selection of state, categories (health outcomes, prevention, unhealthy behaviors), measures (depends upon category selected), and types of report (maps, charts, datasets, et cetera). Through the 500 Cities Data Portal, it is possible to download the data, create a custom report, customize visualizations, and more. The ability to examine interesting local data is highly impactful.

Another project the CDC Foundation is very proud of is a partnership with both Bloomberg Philanthropies and the Bill & Melinda Gates Foundation for over 10 years to reduce tobacco use in 35 countries. To date through these two organizations, the CDC Foundation has raised and implemented on the ground about $110 million. This is in addition to what CDC is actively doing in this space, but the CDC Foundation's ability to engage two of the largest major philanthropies in the world and have a seat at the table for CDC to be right there with Mike Bloomberg and Bill Gates has been a great opportunity to help not only to implement this work, but also to play a strong role in influencing the other programmatic area investments that Gates and Bloomberg prioritize in this space.

A good example of the complexity and diversity of partnerships that the CDC Foundation supports is the Food Fortification Initiative (FFI). This project is a little harder to explain because there are many "cooks in the kitchen" so to speak. FFI is an entity that is a joint partnership of CDC, the CDC Foundation, Emory University, and many others who work to support advocacy and TA across the globe in fortifying foods with folic acid and iron to prevent birth defects among newborns. They have had a variety of different funders comprised of those who have an interest and influence in this space to help leverage their relationships, suppliers, and vendors to fortify food or to provide financial support for the good of the cause as well.

One area in which the CDC Foundation is excited to work is emergency response. CDC is open to receiving help from a variety of partners to quickly activate and address emergencies, and it is a great opportunity for the CDC Foundation to shine a light on what CDC is doing while the world is paying attention to such emergencies. To support CDC's response to Zika virus, the CDC Foundation, through in-kind product donations and contributions to its Emergency Response Fund from philanthropies, corporations, and individuals, is helping extend this work, particularly in US territories. This work has included support for Zika Prevention Kits (ZKPs) for pregnant women; a Zika prevention communications campaign targeted at pregnant women and their communities to coincide with the ZPKs; access to free contraception, including long-acting reversible contraception, to women who choose to delay or avoid pregnancy during the Zika outbreak; and two high-level summits hosted by CDC to combat Zika.

Also in the emergency space, the CDC Foundation was able to mobilize resources in response to the Ebola epidemic a few years ago, even before CDC was able to officially declare this to be an emergency. The CDC Foundation assisted CDC by providing critical assistance and supplies through donations to the Foundation's Emergency Response Fund, which enabled CDC staff to respond quickly to changing circumstances and needs. The CDC Foundation worked with many donors to provide much-needed supplies and equipment for use on the ground in West Africa, such as infection control tools, vehicles and motorcycles, hiring of locally employed staff, exit screening tools, and supplies at airports such as thermal scanners to detect fever. In this case, the CDC Foundation already had staff in West Africa on other projects so a foundation was already built through which they were able to quickly transition in support.

In terms of what the CDC Foundation is hoping to do across injury, they are seeing a growing trend of projects submitted to them that align with NCIPC and agency priorities in the areas of suicide prevention, veteran's issues, opioid use, and child sexual abuse. Through this, they are able to:" 1) take a strategic approach to building new relationships with donors in this space with which they may never have interreacted before; and 2) educate and influence the private sector about why this is important and why they should invest in and support this work.

One example of this work is a comprehensive approach to suicide prevention in Colorado. This is a coalition of the Colorado Department of Public Health and Environment (CDPHE), the National Action Alliance for Suicide Prevention (Action Alliance), and a variety of other groups that come together through the Colorado National Collaborative (CNC). There is a large project with a price tag of about $21 million over 5 years to help support testing of the implementation and evaluation of a comprehensive, integrated approach to suicide prevention and optimizing the relevance of this model for other states in the future. Not only does Colorado stand to save lives, but also it will offer the country a well-documented path forward based on a community-informed and field proven, evidence-based, and cost-effective model that can be tailored and utilized by other states. There is a lot of discussion and activity in the suicide prevention space, which is very siloed and segmented. This is an example of what the CDC Foundation can do

with combined resources. The influence and expertise of CDC allows them to have a seat at the table and play a strong role in managing the implementation of this work.

Another example of what the CDC Foundation is currently seeking to fund in the suicide space and related to some of their veteran's work is a program called TalkVet. This is a particularly exciting project that is led at CDC by Drs. Joseph Logan and Steven Sumner in partnership with Harvard Medical School and West Virginia University where the team has developed a way to help prevent suicide among veterans that builds off of CDC's *Preventing Suicide: A Technical Package of Policy, Programs, and Practices* and the connectedness model. It is known that veterans can sometimes be resistant to asking for help, but they might be prone to offer help and lend themselves to the sense of community that they found in the service. There is an existing social media platform called TalkLife that is involved in this, which is meant for people to talk about their problems. This is a "water cooler" moment in which someone may not schedule an appointment with their doctor, but will chat about what is going on. The team at CDC and Harvard have develop machine learning algorithms that can pick up on that chat and identify suicidal thoughts and/or behaviors before they are even spoken of. This is predictive learning that can identify someone in need of help. Various interventions will be tested to provide support for those who casually mention something versus those who are in danger of immediate harm and needing emergency services. As the CDC Foundation has deepened its relationship across veteran-serving organizations, they have identified a lot of really great work occurring that is siloed and independent without a clear measurement of which ones are working and for which people. The hope is that through this experiment, it will be possible to identify people in need and tailor care at an individual level using the best-suited interventions rather than taking a one-size-fits-all approach.

In closing, Mr. Abraham again expressed his gratitude for the opportunity to shine light on the CDC Foundation's work and a more important brighter light on the work that CDC does on a daily basis.

Discussion Points

Dr. Herrenkohl requested that Mr. Abraham elaborate on the interface between the management function that the CDC Foundation provides and the science.

Mr. Abraham replied that the Advancement Team he is a part of team primarily interacts with the private sector to help establish relationships and understand CDC priorities so that they know what to find an appetite for. The Programs Department has a staff of about 130 core program employees, plus field employees who are hired to be project-specific. The program employees manage the implementation of this work. They all have MPHs or PhDs and many of them have come to the CDC Foundation from CDC, so they have a public health background. They work hand-in-hand with CDC Principal Investigators (PIs). The role that a Program Officer might take in managing the project includes managing the budget in terms of spending and procurement. There can be a lot of requests from the donors in terms of regularity of reporting and other issues that the PIs should not have to manage. CDC Foundation employees also hire and manage the field for specific projects. The field staff have @cdcfoundation.org email addresses, but are housed out in the field or at CDC with the PIs. The Program side works to ensure that the Program Officers who are supporting this work are primarily supporting the CDC experts who are actually implementing the work, and balancing what they have agreed to do as a foundation in the contracts with the donor. In Mr. Abraham's side of the work in establishing that partnership on the front end, they also are very protective in terms of drawing a line between what a donor is looking to support versus having any sort of influence on the science

or the scope of work. There is a rigorous review process in which the scope of work is first reviewed at CDC and the CDC Foundation before donors are even identified to determine whether it is a priority and passes the test to solicit and build partnerships. Once a donor is identified, the CDC Foundation completes a thorough donor and gift review on the individual gift. It also goes before a CDC Gift Review Panel in the Office of the Director (OD) to scrutinize not only that actual donor, but also the relationship that the donor will have with the project. There is a strict vetting process to ensure that donors are not having any undue influence on the science, and to educate and guide that donor about what is deemed a priority by CDC. In many cases, there is a value that a donor can add in terms of other expertise and experience in certain areas. The CDC Foundation works very hard to manage that gray area and not to get in trouble.

Dr. Liller requested clarification regarding whether the projects are donor-initiated, CDC-initiated, or a combination of both. She also wondered how the universities get involved such as in the suicide project with Harvard Medical School and West Virginia University, and whether an investigator can pose an idea to CDC that could become a potential foundation project.

Mr. Abraham replied that there is a combination, but the projects are primarily CDC-initiated. Many times, and in most instances, if CDC has a need for which there are no federal appropriations, they will design a project concept outline and develop a budget to understand what it will cost. The CDC Foundation will then scroll through their contacts and CDC's contacts to start conversations about who might be interested in funding the particular work. Many times, a donor is interested in funding a particular project because it is good public relations (PR) for them, or because it aligns with their own strategic priorities. At the level at which they are fundraising, the donor organizations are oftentimes as invested in public health as some of the teams at CDC. For example, Bloomberg and Gates have funding for and a strong interest in this work. The goal for the CDC Foundation is to find that alignment and work all of that out. Many times, philanthropic or private sector entities already have pre-existing relationships with CDC through other projects, and CDC may approach the CDC Foundation when they feel there is an alignment with a donor they wish to pursue. The CDC Foundation will act as a liaison for those conversations to help navigate them. In terms of university involvement, the suicide project was somewhat different for the foundation. Typically, the project is a CDC-led initiative. The suicide project is a CDC, Harvard, and West Virginia-led initiative that has 3 PIs. There is an existing collaboration among this team who submitted the idea to the CDC Foundation. Rather than going through Harvard or West Virginia for fundraising from the private sector, they wanted to go through the CDC Foundation. This is likely because the CDC Foundation has a lower indirect rate than many university partners. It also helps to elevate CDC's role at the table, in that example particularly.

Dr. Greenspan added that in terms of the CDC, Harvard, West Virginia project, there already was a collaboration with one of NCIPC's ICRCs. To her knowledge, there was no reason why an entity could not approach CDC to try to develop a collaboration. She thought this was the first time they had done this with an external partner as a scientific collaborator. It is certainly something they can look into if ideas emerge.

Mr. Abraham indicated that there are many example in which a university or academic institution is a subcontractor on a CDC Foundation project. They might receive funding from the Gates Foundation on a CDC-led project, and the CDC identifies a team at a university who is best-suited to help implement some of the work on the ground.

Dr. Kaplan inquired as to whether this was the most effective or efficient way of building a public health infrastructure that is due to a shortfall in funding from Congress and why the foundation even exists. It seemed odd to him and he wondered about the rationale.

Mr. Abraham replied that part of the CDC Foundation's role that differs from a typical nonprofit that is purely advocating for donations for a cause is that in addition to the causes for which they are advocating, they also are helping to advocate for public-private partnerships and investments. It can be very strange to talk to a private sector donor to ask, on top of the tax dollars and everything else they do to support the federal government, for philanthropy to further support the federal government. For a variety of reasons, there are areas that the CDC cannot fund alone that are still priorities. CDC will never have the federal appropriations that they want or need to do absolutely everything. There are areas that the CDC Foundation hopes to fundraise for in addition to what CDC receives, but there is also a value that the foundation brings outside of donors giving directly to CDC. There is a mechanism through which CDC can receive direct gifts, but once that money is transferred from the donor to CDC, it becomes federal money with all of the complications and inflexibility of spending federal money. There are some perks that the CDC Foundation offers in terms of helping to strategically building relationships. CDC also does not have the capacity or infrastructure that is needed to strategically build relationships with major donors, which is another area in which the foundation hopes to provide value.

Dr. Daro Tuggle asked whether other federal agencies have foundations.

Mr. Abraham replied that some other federal agencies do have foundations, such as NIH and the National Parks Service (NPS).

Dr. Compton indicated that the Foundation for the National Institutes of Health (FNIH) was authorized by Congress in 1990 and began making its first grants in 1996. For the most part, it is very similar in terms of its mission to promote public-private partnerships in areas where NIH would not be able to engage in direct outreach to the organizations.

Dr. Simon expressed appreciation to Mr. Abraham for his helpful overview of the CDC Foundation. He was struck by two things with the pie chart, one of which was the 4% revenue allocation for research and the >1% allocation for injury and violence. As someone on the frontlines soliciting donation, he was curious about any insights Mr. Abraham might have regarding research and injury and violence proposals that he feels would be particularly compelling and would resonate well with the donors that NCIPC should be aware of when thinking about this as a group.

Mr. Abraham responded that they want to be careful not to say, "Here is what private sector wants to fund, so let's build some project opportunities that sound good to private sector donors." He emphasized that this pie chart varies greatly year to year and that the one he showed is particularly to the 2016-2017 fiscal year. What they are currently finding with the portfolio of work coming out of injury is that they have a lot in the suicide space, particularly in recent months with a couple of celebrity deaths by suicide. While this has generated a lot of discussion, there is not a lot of funding in this space. Some of the largest gifts they have seen from philanthropies and foundations on suicide prevention have been $50,000 to $200,000. About $200 million is needed to do something significant. Some of these other areas, such as infectious disease and global health, can be big scary things that people respond to differently. There has been an effort over many years to direct philanthropy and donors to give in these spaces. Chronic disease and birth defects groups have been built for years that fundraise and

advocate for the need for private sector funding and participation in these areas. In terms of funding for suicide prevention, there is a stigma that people do not talk about suicide and a lot of the donors are family foundations that have been personally affected by this. Part of the strategy involves not only convincing those family foundations to participate in public-private partnerships, but also steering and influencing some other major donors to understand that this is a public health emergency to which they should be paying attention. In the same way that Ebola is big and scary, so is suicide. That takes a while and some higher level conversations. To provide an example of that, Dr. Judy Monroe is the President and CEO of the CDC Foundation. She spent 6 years at CDC as the Director of the Office for State, Tribal, Local and Territorial Support (OSTLTS). She is regularly working at the top of the hierarchy with major donors to help understand their priorities and let them know what the CDC Foundation is doing and what they are seeing from CDC and why that is important. It will take more time to build this slice out. A couple of things are encouraging in this space. One is that Bloomberg has just given through the CDC Foundation to support opioid work with CDC. In the same way that Bloomberg's global tobacco work is one of their 5 or 6 major public health pillars, opioids is now becoming one of those pillars. This is the first time the Bloomberg has taken a step into domestic work. Most of their giving has been global. Mr. Abraham's understanding from some of the meetings earlier in the summer is that this is an issue that Mike Bloomberg brought to the CDC Foundation Board as a priority he wants to address domestically. CDC and the CDC Foundation had been at the table with Bloomberg discussing what the agency is doing in the opioid space and what the need is, and were eventually able to help move that donor into spaces that are priorities for CDC. That is part of what is just now beginning to occur across injury, and what needs to happen a lot more as they work to better understand the incoming needs and priorities of injury and proactively build those relationships and advocate for those issues rather than reacting to something that is given to the foundation such that they are cold soliciting.

It seemed to **Dr. Liller** that the areas on the pie chart with the highest percentages receive a lot of funding already in comparison to injury and violence. She wondered whether there is any push to work more in injury and violence. She would think with violence, issues surrounding firearms, TBI, concussion, and other areas that have received national and international attention, injury and violence would be rising up as a need. She asked Mr. Abraham if he is seeing any shifts in relation to this, the importance of these areas has been clearly shown over time.

Mr. Abraham said he thought there were two shifts to consider. One is the shift of helping to advocate from a private sector support focus, and the other is to build business so to speak between CDC and the CDC Foundation. The CDC Foundation does not initiate project ideas. They can hear about things that are occurring on the ground and then try to connect the dots back to CDC to determine whether there is interest. Primarily what this could present is an opportunity for CDC staff to submit more requests to the CDC Foundation. The areas with the highest percentages on the pie chart also are typically the areas from which the CDC Foundation receives the most requests from CDC. While the bulk of his responsibility is to support all non-communicable disease work at CDC, he probably spends a good 40% of his time specifically on injury. More conversations have come out of injury and he has a weekly call with their liaisons in injury to discuss project ideas, projects the foundation is seeking to fund, and brainstorm about donors. Establishing those relationships within injury helps to let people at CDC know that there is a foundation that can help to support this work. He has gone to other division meetings to help advocate on that as well. Part of the learning curve is to let injury know this is available, and build relationships across injury that can help bring prime projects to the CDC Foundation that they can then work on. In terms of what he is sensing in his conversations

and what he sees as an opportunity to grow what they do in the foundation, injury is a ripe opportunity.

Dr. Barnes emphasized that the rate of suicide has continued to increase for the past 25 years, but they keep doing the same thing over and over and expecting different results. She liked the fact that the CDC Foundation wants to move more into that area, but she wondered what that would look like. Conducting research and getting more answers is fine, but they need to "get into the weeds" and change the conversation and do something different because people are still dying. She expressed her hope that the public health approach will include getting into and funding communities so that they will have resources to do what they need to do.

Mr. Abraham clarified that the CDC Foundation's role is not to design the science that CDC is trying to do, and they leave that to the experts across CDC. They have worked to make sure that CDC has a seat at the table in many of the conversations that are occurring with various partners in this space. Specific to the Colorado project, they recognized that $21 million over 5 years would allow them to do something big. The way that budget is broken down includes allocations down to a county level to really be "in the weeds" in implementing this work and helping do what needs to be done to try to make a difference.

Apart from the funding of science**, Dr. Kaplan** observed that as someone who has been in public health for a long time, one of the concerns he has had is how uninformed the general public is about public health. Most people think of public health in terms of crisis situations (homicides, food poisoning, *E. coli*, et cetera). However, public health is a lot more than that. He asked whether the CDC Foundation does anything to educate the public about what constitutes public health and that everyone needs to be concerned about it.

Mr. Abraham responded that the CDC Foundation is really directed by CDC even though it is an independent organization in terms of what is prioritized. The CDC Foundation Executive Team is often at various philanthropic meetings with less of a public health audience where they are advocating for the need for philanthropy to be involved in public health. That begins to address education of the broader population. There are a couple of CDC-led projects that the CDC Foundation worked to fundraise that helped to expand the role of public health from a youth educational standpoint. For example, CDC conducts a camp at their museum that helps to ideally build the bench of public health workers. There is really not a lot for which the CDC Foundation either has funding or direction to make the case broadly for public health outside of project-specific requests. However, they would love to do that if they had the funding for it.

Opioid Prescribing Estimates Workgroup (WG) Update/Report

Introduction

Debra Houry, MD, MPH
Director
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. Houry indicated that during this session, the NCIPC BSC would be deliberating on a series of Opioid Prescribing Estimates WG discussions regarding opioid prescribing practices for acute and chronic pain conditions, as well as active cancer pain and palliative care. Since the release of the *CDC Guideline for Prescribing Opioids for Chronic Pain*, a slowing of opioid prescribing has been observed. However, rates still remain high nationally. It is known that many opioid

addictions and overdoses begin with receiving a prescription for pain medications. This is why the work of the Opioid Prescribing Estimates WG is so important. She often asks her patients in the medication-assisted treatment (MAT) clinic what started this dependency for them. She hears from many of them that it was a prescription for pain medication. By understanding variations in prescribing rates by region and condition and identifying prescribing recommendations, existing guidelines, and research studies, together they can help inform improvements in clinical care.

This WG report and recommendations from the NCIPC BSC will be instrumental in guiding CDC's direction in this research effort. The commitment of the core WG and subject matter experts (SMEs) is impressive. More than 50 experts contributed to this report, representing specialists, healthcare providers (HCP), and researchers from a wide variety of fields, as well as patient representatives and an ethicist. Acknowledging that serving on this WG required a sizeable time commitment, Dr. Houry sincerely thanked everyone for their willingness to help CDC and HCP across the country move toward safer, more effective opioid prescribing and pain management. She especially thanked Dr. Phillip Coffin, who is a member of the BSC and the WG Chair, who was responsible for facilitating WG meetings and leading the development of the WG report. CDC understands that this is a complicated process and that there is often not clarity in prescribing practices within disciplines and across states. The WG's effort in helping to identify where best practice and evidence-based guidelines do exist, as well as where there is ambiguity in prescribing practices, will greatly inform future efforts. She thanked the WG members for contributing their knowledge, expertise, and time to this effort over the past several months.

Opioid Prescribing Estimates WG Report

Phillip Coffin, MD
Char, Opioid Prescribing Estimates WG
Director of Substance Use Research
Center for Public Health Research

Dr. Coffin thanked the WG members, SMEs, and the CDC staff who did a fantastic job and made this a feasible undertaking. This was a challenging WG, particularly given that it was difficult for some members who participated to completely understand the charge of the WG and the specific project because it differs from the *CDC Guideline for Prescribing Opioids for Chronic Pain* produced previously. That issue arose many times. A lot of the discussion on the WG calls centered on suggestions that were actually guidelines for opioid prescribing. Those comments were not the focus of the report, given that they were not the focus of the charge of the WG. This project was undertaken by CDC/NCIPC at the direction of HHS in order to try to establish the ideal level of opioid prescribing. Somewhere between 20 to 30 years ago, too few opioids were prescribed to manage pain in the US. Over the last 10 to 20 years, too many opioids have probably been prescribed to manage pain. What is the optimal level in that benchmark?

Building upon Dr. Coffin's description of what this project is, Dr. Christina Mikosz from DUIP indicated that from a big picture standpoint, CDC wants to make sure that Americans have safe and effective ways to treat pain and explore further what the intersection is between safety and efficacy. There has been an evolving body of research that shows different ways that opioid prescribing has changed and how that might impact how patients are treated. For instance, there are data showing that patients may not take all of the opioids they are prescribed after a

given indication or after a surgery. There also are data that show that patients may not be prescribed opioids that match with their reported pain scores. There is geographic and within specialty variation for how much opioids are being prescribed for patients. This raised several questions that CDC wanted to address in the scope of this project. First, they wanted to examine what current opioid prescribing looks like in the US on an indication-specific basis. For the second phase of the project, they wanted to assess opioid prescribing rates on an indication-specific basis if better aligned with best practices as defined by existing clinical guidelines and existing research studies. The third phase was to figure out the difference between current opioids prescribing rates and best practice opioid prescribing rates as defined by existing clinical practice guidelines and in turn what direction opioid prescribing would need to change for each indication to be better aligned with guideline-driven best practice.

Dr. Coffin indicated that the BSC WG on Opioid Prescribing Estimates held four meetings addressing clinical situations in which opioids are prescribed: post-surgical pain (9/21/18), chronic pain (9/26/18), acute non-surgical pain (10/12/18), and cancer-related and palliative care pain (10/16/18). The charge of the WG was to:

- ❑ Identify key recommendations from evidence-based guidelines for prescribing opioids for acute and chronic pain conditions, on which to develop estimates and goals
- ❑ Identify key diagnoses and procedures for which opioids might be prescribed to manage acute and chronic pain
- ❑ Identify key clinical and epidemiological studies that provide information for estimating opioid need for specific diagnoses and procedures
- ❑ Provide expert input on methods for generating opioid prescribing estimates and reference points
- ❑ Identify guidelines and recommendations for acute pain that could be further communicated by CDC through translational materials
- ❑ Identify other activities needed for the development, interpretation, dissemination, and implementation of opioid prescribing guidelines, recommendations, and reference points

Dr. Coffin pointed out that the observations he would be describing focus on clinical feedback in terms of areas that can be improved. In terms of overall observations, there was one significant observation. While this effort is not intended to create new guidelines, many people participating raised concern that these could be interpreted as guidelines. There is a risk for misuse of the analysis by payors/clinical care systems that may consider any benchmarks that are set as being to establish quality indicator guidelines for providers. This may be a concern given that different systems take care of different patient populations, and certain patient populations might need different levels of opioids based on their comorbidities, etcetera. This could result in tapers without appropriate considerations and training. It also was observed that the framework of the benchmarks focused on benefits outweighing risks rather than risks outweighing benefits, but that risks should be the focus of consideration of whether opioids are used.

One of the major limitations noted pertained to the data source. CDC plans to use the Optum dataset, which is a commercial insurance dataset. The concerns with that dataset are that it does not include Medicaid data, it may not be nationally representative, it does not include electronic medical record (EMR) data, and there are no inpatient data. Absence of Medicaid data is important because people on Medicaid may have fewer resources to access other forms of pain management, few social support resources, and more comorbidities. Many patients with sickle cell disease (SCD) rely on the Medicaid system, particularly those with more severe

disease. Therefore, it may be difficult to capture certain diagnoses in a representative way. The absence of EMR data will limit the ability to conduct more advanced analyses that take into account the level of opioids a patient was being prescribed in the hospital before discharge, or take into account other comorbidities the person has that may prohibit the use of nonsteroidal anti-inflammatory drugs (NSAIDs). Several suggestions were made, one of the bolder of which was to consider descriptively reporting prescribing estimates without tying it to specific benchmarks, particularly for certain diagnoses. Also suggested was to consider the post-approval safety data from pharmaceutical trials in helping to establish benchmarks. Some suggested to consider regional, prescriber, and facility-level differences in the analyses, given that there may be differences in how people are prescribing based on regions, facilities, and even individual prescribers. Repeatedly emphasized and very important was the suggestion to explicitly state the limitations of the dataset in any reporting.

One of the questions CDC had regarded how to tie prescriptions to diagnoses, which was an interesting topic of conversation. Prescribing certainly varies by the type of pain and the venue from which prescription is issued. For example, acute pain prescriptions filled in the emergency department (ED) would likely be filled within 1-2 days of diagnosis. Reliance on the Optum dataset for diagnostic code and prescription filled may not be beneficial in terms of tying it to chronic pain, given that a patient may not receive a prescription for chronic pain until two years after the diagnoses. The chronic pain linkage might prove to be particularly challenging. Prescriptions for elective surgical procedures may also be challenging, because they may be issued/filled several weeks prior to the procedure. One suggestion was to rely on the existing literature for estimates and allow estimates to vary by pain type/diagnosis/venue. It was noted that some of the new Optum dataset may allow linkage to de-identified provider data. Thus, if a prescription can be linked to a specific provider who made a diagnosis, it may be possible to reliably link the diagnosis to the prescription.

Several WG members noted that opioid experience is very important to consider in terms of what opioids are being prescribed. Prior opioid use is felt to be important to factor into opioid requirements going forward. Someone on a high-dose opioid would be less likely to manage on a few doses of oxycodone than a patient who has never used opioids. That would be optimal for a patient who has never used opioids. In addition, patients who are on agonist treatment for opioid use disorder (OUD) may be expected to require substantially more opioids for acute pain. This population may be difficult to identify given the protections of data on treatment for substance use disorders (SUD).

In terms of pediatrics, there were some concerns that the Optum dataset may be insufficient and inappropriate for pediatrics because so many children rely upon the Medicaid system. At the same time, it was noted that it is very important to include pediatrics if at all possible because this population is so rarely included in this type of work. Many of the benchmarks for diagnoses were set at “0” opioids for pediatric patients, which not be appropriate for many diagnoses. Some of the suggestions were to consider different age groups of children and/or consider weight rather than age in guiding opioid dose recommendations. Also suggested was to explicitly state conditions for which benchmarks could not be generated to ensure that adult results are not applied to children in those circumstances. There was concern that if this is done for adults, the assumption will be made that it applies to children as well. WG members wanted to ensure that CDC explicitly states that they could not develop a benchmark for children in this circumstance. WG members also suggested considering flexible benchmarks and noted that there are certain diagnoses in children that are not treated with opioids (e.g., back pain) while others are (e.g., sarcoma and solid tumor malignancies).

SCD was another topic of WG conversation. Those who provide clinical care recognized that this would be a major challenge for developing benchmarks for what the appropriate opioid prescribing is for SCD, given the variation in the needs of individual patients. There was some back and forth about whether SCD is an appropriate diagnosis for this type of benchmarking and, if so, whether it should be categorized as acute or chronic pain. In the event that SCD is not included, an explicit statement should be made that it is not included. Again, WG members observed that the Optum dataset may not be ideal for SCD and that Medicaid data would be superior.

Regarding observations specific to post-surgical pain, many WG members suggested considering the co-morbidities that may increase the risks of opioids and the risks of alternatives like NSAIDs in developing and benchmarking opioid prescribing estimates. For example, if someone has renal failure, opioids may be riskier, but NSAIDs may be entirely contraindicated in such circumstances. If someone has a history of gastrointestinal hemorrhage, ibuprofen should not be prescribed in that circumstance, which may result in reliance on an opioid. If it is possible in the dataset to discern that, that may be helpful. Some hospitals and clinical systems have higher rates of patients with such comorbidities. WG members suggested recognizing that surgeons often consider opioids to be the safest pain management option because of the risks of NSAIDs, including bleeding and some mixed data that they may contribute to poor wound healing as well. WG members noted that there are patient-level factors that may be more important than procedures in determining opioid need, such as opioid-experienced versus opioid naïve status and the presence of an OUD on an opioid agonist or partial agonist for treatment. WG members suggested that consideration should be given to the use of procedural opioid need in calculating outpatient need. However, this would not be available in the Optum dataset. The WG also emphasized that it is important to note that it is hard to use older data to make plans for today or the near future. Because patients are discharged so promptly now from hospitals following surgery, particularly elective surgeries, the old experience of giving someone a few tablets of acetaminophen with codeine may not apply for discharging people early. Patients are often still numb at discharge and have not started to experience their pain, so estimating their need may be challenging. This may make it difficult to translate some of the evidence from the past to benchmarking for going forward. The WG members suggested considering inpatient and outpatient procedures and elective versus emergent/trauma procedures differently. There were some differing viewpoints as to increasing or decreasing the number of procedures assessed. Some WG members felt strongly about certain diagnoses being included, while others felt that if it was trimmed down, it would be possible to do a better job of focusing on the diagnoses and procedures that have the best data. The WG also suggested considering ranges for benchmarks, usually including some value above “0.”

Moving on to observations specific to chronic pain, the data source may be particularly challenging for assessing chronic pain because linking of a prescription to a diagnosis is going to be difficult. The WG recommended considering separately analyzing patients on high-doses for chronic pain (e.g., “legacy” patients), as those patients are likely to be qualitatively different from others. Ideally, an analysis would factor in prior non-opioid therapies in establishing the appropriateness of opioid therapy. WG members noted that provider-level factors also may be important to consider.

With regard to children, the WG felt that pediatric data are very limited. Overall for chronic pain, some WG member suggested considering limiting benchmarking to the 5 to 10 most common conditions with the highest level of interest. They also suggested that some diagnoses such as lower back pain might need to be subdivided, given the difference in management of distinct types of lower back pain. Some WG members suggested limiting the number of chronic pain diagnoses evaluated.

In terms of observations specific to acute non-surgical pain, the WG members noted that the duration of treatment may be more important to consider than dose in this and potentially other categories of pain. If someone is already on opioids for chronic pain or OUD treatment, the duration of therapy they may need for their acute pain may actually be the same as someone who is opioid-naïve. The dose would be different, but the duration may be the same. The WG also noted that some diagnoses may need to be further subdivided. For example, CDC had grouped major fractures as one category. The WG members inquired as to which bone and the mechanism of injury. In many of these circumstances, prescribing opioids for major fractures is actually a quality of care indicator providers have. Shifting away from that is challenging if CDC sets benchmarks that do not include prescribing opioids for certain fractures. The WG suggested adding "ankle sprain" as a diagnosis that would rarely require opioids. Abdominal pain was noted as a diagnostic category that is too broad, given that there are dramatic differences between pancreatitis vs. dyspepsia, surgical vs. nonsurgical causes of abdominal pain, and nonspecific low back pain vs. compression fracture. The WG discussed zoster and renal colic and the need for opioids, not necessarily at diagnosis, but in some cases when initial treatments fail.

The session on cancer-related pain and palliative care was a relatively short session during which the WG also discussed some overall issues that had arisen during the WG calls. A major topic of that call was that categorizing cancer-related pain is remarkably challenging. Calling it "active cancer pain" may not be sufficiently descriptive. Some suggested "in active cancer treatment," which is somewhat better but still limited. The WG suggested that once cancer treatment is completed and if it is successful and the person is cured or in remission, then resultant pain may be considered the same as standard chronic pain (e.g., chemotherapy-induced peripheral neuropathy). The WG noted that there are some complications of cancer treatment that definitively do require opioid therapy (e.g., graft-versus-host disease). They also noted the defining palliative care is complicated for this process as well. The WG suggested considering any life-limiting condition, including SCD, and when returning to work is not a possibility as palliative diagnoses.

The WG also made suggestions for translational materials. The members suggested materials for providers from CDC that discuss management of specific diagnoses (lower back pain, fibromyalgia, cancer surgery); how to manage patients by age group; how to manage patients with OUD, particularly those on treatment for OUD; and how to manage tapers in general and in post-operative settings where tapers are sometimes not implemented when they should be.

In addition, WG members suggested that consideration be given to the following additional guidelines:

- Washington State Agency Medical Directors Group (AMDG) guidelines/Bree Collaborative. The guidelines were updated in 2015 and during the summer of 2018 [Note: It was mentioned that while the guidelines have been applied, it is unclear whether they have been effective. Von Korff illustrated they did not affect overdose].

- ❑ American Society of Clinical Oncology (ASCO) policy statement and management of chronic pain among survivors of adult cancer.

- ❑ ACTION guidelines [Note: This was said to potentially be helpful with classification].

Dr. Coffin emphasized that the WG encountered a number of challenges, but that he had remained relatively agnostic about how to handle those challenges and looked forward to a broader discussion with the full BSC. He opened the floor for general discussion about the report itself before proceeding to BSC recommendations.

Report Discussion Points

As a member of the WG, **Dr. Cunningham** reiterated some of the points that Dr. Coffin made. There were a lot of questions regarding the charge about what is intended to result from this effort, and concern that this is essentially going to be a guideline even though it has been stressed continuously that it is not. There are potential implications and harms if this is perceived as a guideline, particularly with regard to ways in which people may be denied care. This concern was repeated during every WG call. The concern about the limitations with the Optum dataset also was a repeated theme, particularly given the number of patients and specific diagnoses. Many important entities and groups of people are likely to be missed because the Optum dataset does not include Medicare/Medicaid, which has important clinical implications. With those two issues taken together, there were questions about the overarching goal and how or if this effort should move forward.

Having joined the calls, **Dr. Compton** pointed out that one thing that may not be apparent is that this is a growing area in terms of the literature and science. Even in the process of conducting this initial review and outreach, there are new papers being published almost every week on this topic. One challenge going forward pertains to how to take into account the emerging data above and beyond the original analyses that may be planned. It seems to him that making this a living process should be a key goal.

Dr. Coffin requested that Dr. Mikosz and/or Dr. Greenspan speak further about the rationale behind the selection of the Optum dataset, as well as the pros and cons of using it.

In terms of the rationale for selection of the Optum dataset, **Dr. Mikosz** pointed out that there is probably no dataset available to CDC that will give them every element they are hoping to include. Regarding the analyses, there were several important considerations about the data points that need to be included. The hope was to include data that are as timely as possible because the climate on opioid prescribing is changing so quickly, they want the data to reflect today's opioid prescribing conditions as much as possible. On a more granular level, they wanted to construct an opioid prescribing profile that would be able to follow patients throughout the dataset(s) to be able to get a sense of why opioids are being prescribed and for what indications, as well as the specialties of the providers prescribing them. Therefore, they needed data to speak specifically to those variables: prescription claims data, data that would outline specific medical encounters and the diagnoses that were made at each of those encounters, patient-level data to be able to link all of this down to the patients, provider-level data, and data that outlined the providers' specialty. The only dataset available that included this combination of factors was the Optum Labs claims data that they have, which they know has some limitation that could affect the analyses. They clearly understand the concern and recognize the limitation regarding Medicaid claims data, and a point of discussion on the calls regarded how to best work around that.

Dr. Schwebel noted that while he is not a prescriber and does not work with patients, from his perspective as a psychologist he thinks about individual differences in pain and that pain is a subjective experience. Some people experience pain in different ways than others, which raised the question for him about whether it is possible to have any guidelines or whether they do need require or rely on prescribers to consider individual differences and to determine patient needs on a case-by-case basis.

Dr. Comstock inquired as to whether it is possible in the Optum dataset to determine the affiliation of the provider, not just the specialty. For example, she had someone from the School of Pharmacy talk about opioids in the classes she teaches. There were two physicians in the same provider category who work in different clinics, both of whom said that they are bound by their clinical guidelines in terms of how many pills they are required to prescribe. This was dramatically different between the two physicians, because their clinics had dramatically different guidelines. Both of them said that it does not matter what patients ask for. For example, if a patient asks for only 2 days, they still have to give them X number of days in accordance with their clinic priority. This suggests that some prescription practices might be less condition-driven and more clinical policy-driven.

Dr. Mikosz indicated that they cannot acquire clinical affiliation from the Optum dataset. The lowest level of geographic data that is accessible is county-level data. It does not drill down to the specific health system or hospital.

Dr Cunningham stressed that this is a great example of all of the nuances involved. In addition to clinic-level policies, states have laws. New York State has a law about acute prescribing of a 7-day amount. Thus, there also may be differences in state prescribing that are not at all related to the condition. As a provider, she pointed out that providers who prescribe opioids take all of these nuances into account. This is why they are doctors, not technicians. What they heard from many WG members is that all of these nuances are critical and inform prescriber judgment. Like all datasets, Optum has limitations. However, there is a mismatch between the art of medicine and all that goes into these decisions versus people utilizing something that is somewhat of a "blunt instrument" for guidance and what the implication of that would be.

As someone who is not a physician, **Dr. Hedlund** said he interpreted the report the same way Dr. Cunningham did. Even though these may be the best data available, they may not be very good for addressing the many individual differences that exist. It is difficult to publish any guidelines without them being interpreted as ceilings. With that in mind, he wondered what the intended use of the report is, what will happen to it two levels up, and where CDC intends to go with it moving forward.

Dr. Mikosz explained that the way CDC was envisioning this study was that it essentially would be a commentary on what current opioid prescribing looks like in the face of existing guidelines and the ever-growing body of resources available that examine opioid prescribing, and offering a sense of how the needle needs to move on an indication-specific basis at the population-level to better align with best practice. She acknowledged that this is a complicated study, which they recognized from outset. Even before the WG meetings, they knew that a lot of complicated factors would have to be taken into account moving forward. In terms of what the end product might be, there are several ways to go about this. The original plan was to develop a manuscript that outlined, on an indication-specific basis, how the needle would move to be better aligned with best practice. As was mentioned by Dr. Coffin, CDC also hoped to create some translation materials for clinicians, which would echo some of the guidance that is already published in existing guidelines, to help improve opioid prescribing practices. Recognizing the challenges,

they also strategized about how else this project could look moving forward. To reiterate, there were three steps to this project. The first was to examine claims data to get a sense of current opioid prescribing practices on an indication-specific basis, as well as the best practice component to calculate the difference. Recognizing the challenges, they could go about this a couple of other ways also. Another direction they could take would be to keep the piece about current prescribing practices on an indication-specific basis, but then assess best practice prescribing for a subset of those indications for which the rigor of existing clinical guidelines and research studies would allow them to more confidently say that best prescribing practice should be X. For that subset, they could calculate the difference and how the needle would need to move to better align with best practice. Another option would be to assess current opioid prescribing, which would be the crux of the paper. It would be a summary paper that articulates what current opioid prescribing looks like nationwide on an indication-specific basis, and does not discuss best practice benchmarking or comparisons. This could still be of use to the field because of its national scope and the wide variety of indications it could include. There may or may not be room in the discussion section of such a manuscript to comment on how current prescribing in certain instances does not necessarily align with existing guidelines.

Given the limitations of the data and the differences in clinical and state rules, **Dr. Hedlund** wondered whether anything intelligent could even be said about current prescribing practices.

Dr. Mikosz emphasized that they are looking at this from a population-level and there are going to be pros and cons. There are a lot of limitations that could be discussed in the paper in terms of how that might affect the conclusions reached and the data described. A descriptive paper with those caveats could stand alone as a potential project as well.

Dr. Hedlund stressed that people often read the conclusions and not the caveats, which is true everywhere, so they must be very careful about saying something about current prescribing practices without information on the issues raised by Dr. Cunningham and others.

Dr. Houry emphasized that trends, or at least knowing where the needle has moved, are important because there has been a decrease in prescribing over the past few years. Some people say it has moved too far, but comparing the numbers to 1999, there is still room to go. She practices in the ED and her practice has changed over the past few years. Having better guidance about the current state for acute prescribing and different indications could be beneficial in terms of drawing attention to where progress might need to be moved one way or the other. In fact, they might find that more opioids need to be prescribed for certain conditions and that less need to be prescribed for other conditions.

Dr. Franklin pointed out that they often “throw out the baby with the bath water” in public health, particularly in health departments. There is going to be a lot of variation in what occurs on the ground. The presentations outlined all of the limitations of this instrument, but he did believe it to have some utility. As an epidemiologist, he is interested in understanding the exposure of what is happening. Even information or lack of information from a “blunt object” is data that can help drive what needs to be done in terms of instrumentation and surveillance. It was not clear to him that the project should be squashed. No matter what they produce, it is their responsibility as health officers or epidemiologists to delineate the limitations and caveats. Regardless of how precise they are, there always will be someone who will interpret it in their own way.

Dr. Cunningham stressed that there is a major difference between surveillance and making conclusions about what they should be doing. She thought that was a major piece people had difficulty with, and did not think anyone would have an argument with surveillance. Just because

providers are doing X does not necessarily mean that they should be doing X. There are not sufficient data to address many of these issues, but the fear is that people will draw their own conclusions and implement them. There is no doubt in her mind that this is a reaction from the CDC guideline that was published. While the project at hand is not a guideline, people are thinking about what has happened since that guideline was published, the response and concern about policies and so forth, and that this is going to be another step in that same direction. Of course, all of the caveats and framing are important, but if numbers are published, the anticipation is that people will still move forward with policy changes based on those that may or may not be beneficial.

It appeared to **Dr. Comstock** that the WG was approaching this to some extent similarly to the antibiotic prescribing work. She wondered about the value of that comparison, because minimum inhibitory concentrations (MICs) and minimum bactericidal concentrations (MBCs) can be run on infectious agents to determine how much antibiotic should be prescribed. However, pain is very personalized. The current push is personalized medicine. Unless she missed it, she did not see anything in the information provided that professions or clinical groups should move away from the standard of prescribing based on indication and to a personalized approach. That is, listening to a patient about their actual pain and needs rather than prescribing X doses to someone with a femur fracture or X doses to someone who gets a breast biopsy. Anecdotally, five people in her own life had surgeries in the last year. Each one asked either to be prescribed no opioids at all or only a small amount, but even in research institutes, they were told they had to be sent home with X amount or they could not be discharged. She suggested that whatever the product, it should perhaps include a discussion about the need to focus on personalized medicine based on a patient's needs rather than standard prescribing.

Dr. Coffin indicated that this was a common refrain among the WG. He did not call that out in the presentation, because translating that to these data or this data research project was not feasible. However, this is a good point that underlies a lot of the other points raised. The WG members felt that pain management should be individualized and dependent upon trying other non-opioid pain management strategies, how someone's pain management had been managed to date, comorbidities, et cetera.

Dr. Comstock emphasized that this is what the discussion section of papers are for. Whatever the final deliverable, some of those thoughts should be included in the discussion section. This would make her feel better about this being circulated in the public realm.

Dr. Compton acknowledged that this topic with which they all were wresting is clearly important. A lot of national data systems, at least the ones upon which HHS is relying, are capturing overall prescribing. That is even blunter than the proposed product, which is not assessing any diagnoses. Instead, it focuses on how many pills are prescribed overall and using that to guide policy development. At a minimum, understanding which conditions command the largest percentage of those would be helpful. Given limited resources, this would help to determine how to target certain areas of clinical practice for additional research development and additional practice development to have the greatest impact on the population. There clearly are a lot of leftover medications that are not being taken. Consideration must be given to how to reduce that without harming people in the process.

Dr. Frye observed that at this point, everyone seemed to have asked their questions and voiced their comments. Given the presentation, deliberations, and options for products, she asked the BSC to consider what recommendations they would make to CDC about how to move forward.

Dr Barnes expressed concern about the elderly population, given that when they go through a major operation they are given 20 to 30 pills that are required by policy to be sent home with them. Depression can easily set in because their life is declining and the major operation hampers their mobility. Suicidality can easily set in and it can be easy to decide to take the 20 to 30 pills that are there on impulse. She wondered whether some research could be conducted on working with the elderly in reference to prescribing opioids and setting limitations when sent home after a major operation.

Dr. Greenspan requested that Dr. Eckstrom, who is a geriatrician and served on the WG, would comment on that.

Dr. Eckstrom emphasized what a complicated area this is and expressed gratitude to Dr. Barnes for recognizing this. This is an important issue for older adults. Drugs that are given can cause many side effects in older people that are not common in younger people. Important issues such as decreased mobility, social isolation, and others that might go along with anything that causes pain, such as surgery or other injuries are often not recognized by health professionals. The WG has been trying to keep that in mind. Again, the dataset is not perfect for speaking specifically about older adults. Not having the ability to use Medicare and Medicaid data makes it hard to consider the non-opiate options for treatment of pain in older adults. The importance of non-opioid treatment for chronic pain in older adult is critical to this entire discussion, but is very hard to include in the work that the WG has done so far. This has been one of her key points all along, and she expressed her hope that they could at least include this in the limitations or discussion section somehow to reflect that the WG tried to grapple with this issue. As far as dosing in older adults, a general statement certainly could be made to start low and go slow. Hepatic and renal metabolism in older people is so different that the dose somebody might have needed 10 years earlier for another surgery might have to be halved to not cause side effects 10 years later. Any reports or products produced should note the fact that as people age, they probably need lower doses, longer dosing intervals, and careful follow-up.

Dr. Frye inquired as to why Medicare and Medicaid data were ruled out for use in this effort, given that it seems to be such a major limitation.

Mr. Mikosz indicated that Medicare Advantage data are part of the Optum dataset. Regarding Medicaid, there is an issue of linking multiple datasets and that turning into a comparison of apples and oranges. For instance, the Medicaid data potentially accessible to CDC does not include the same timeframes because it is not as timely a dataset as Optum Labs data. As mentioned earlier, they were hoping to have as timely a dataset as possible. In addition, Medicaid data may not include all states and may be missing some provider data. They recognized the need and what may be missing by not including Medicaid in this analysis, but merging two datasets to try to fill in gaps has the potential to introduce new challenges.

Dr. Comstock observed that there obviously was some concern among the BSC members about this, stressing that she was very sensitive to fact that CDC and the WG put a lot of time and effort into this and want a deliverable of some sort in the quest for good stewardship of tax dollars. Knowing that something must come out of this, she requested feedback from the WG members about what they thought would be the appropriate product (e.g., brief *MMWR*, brief paper, detailed paper, recommendations, educational information on a website, et cetera).

Dr. Cunningham supported the development/publication of a brief paper that discusses the prescribing estimates and not the benchmarks that would be more along the line of surveillance and what is occurring, without discussion about how to move forward or in what direction. The

scope should be reduced to diagnoses that are much more precise, so that they can have more confidence in the level of precision of those estimates. Performing as many subgroup analyses as possible would be beneficial as well (e.g., region, type of provider, and other nuances that are available in the dataset), to help people understand the differences. A central component of the product should be a very clear and upfront discussion about the limitations and how these estimates should and should not be thought about. Although the data are emerging, the reality is that sufficient data are not available in this field currently to make statements about what the benchmarks should be, and doing so prematurely could result in potential harms.

Dr. Franklin noted that there are a couple of references to other countries in the WG report provided to the BSC. It seems like those were dismissed, but he is always concerned about duplicating efforts. Page 10, Paragraph 3 of the report states, "Some members suggested evaluating practice in developed countries that are not experiencing an opioid crisis." What are other countries doing that the US is not doing, and why try to create new benchmarks and new guidelines when other countries may be able to provide important information? This suggestion was raised a couple of times, but was dismissed.

Dr. Cunningham said she had very strong feelings about the issue of international guidelines. The US has a different healthcare system than most of the world, and does not have access to many non-opioid treatments to which other people in the world may have access. Pain is the 5th vital sign that does not exist in other countries. Different in the US is the fact that opioids are free for many patients through insurance but other non-opioid treatments are costly and not covered by insurance, and that plays into US practices and is inherently problematic.

Dr. Kaplan said that while that is all true, there are many versions of universal healthcare systems in the US, such as the VA, Kaiser, and Medicare. These mini-versions of universal healthcare systems should be included.

Given all of the discussion and concerns, **Dr. Liller** inquired as to whether this effort could continue in order to examine those dataset or even assessing a subset of Medicaid and Medicare data even though they are not perfect. To her, not including Medicare and Medicaid is a major issue with the project. It seems like there are so many limitations, two products are needed. One is needed on what was found in terms of surveillance and a second is needed on the limitations, not included in the report because nobody will read it, but included as a separate analysis of the issue. More analysis of datasets is critical before drawing any conclusions.

Dr. Austin inquired as to what would become of the WG report in terms of whether it would become a public document, be posted on a website, et cetera. He also requested clarity with regard to whether the BSC was supposed to discuss revisions to the WG document itself. He asked because his reaction to the document changed from when he first read it to after hearing this discussion. When he originally read the document, he understood that there were data limitations. The question seemed to regard whether the data are comprised of such a non-random sample that the results would be biased. A lot of what was in the WG group report also came across to him as physicians saying, "Don't mess with us" and that detracted from the data issues. He appreciated the discussion they just had because it informed the context of the WG report. Certainly, they should not be making recommendations if there are not sufficient data. While that was not his first impression reading the WG report, it seemed that there was agreement about this based on the discussion.

Dr. Greenspan indicated that the WG document is posted on the BSC website, so it is public. She reiterated that the purpose of the WG was to address a specific charge and present it to the

full BSC for consideration and discussion, and for the BSC to make recommendations and advise CDC on this project as they deliberate what to do moving forward. There have been times when WG reports have been modified based on BSC feedback, but the decision to modify the report versus incorporating feedback can vary by the purpose of the workgroup and the BSC's recommendations. It was not clear that what the purpose in modifying this report other than incorporating the BSC's feedback. That differs from an evaluation during which the WG may ask CDC for more information or makes suggestions/recommendations.

Dr. Hedlund supported surveillance, mining the data as much as possible, and not including benchmarks and guidelines.

Dr. Coffin emphasized that he had tried to remain agnostic and was sensitive to concerns that as a physician, he could be perceived as wanting to protect his freedom of practice. That said, his take is very similar to Dr. Cunningham's. However, he was not worried about potentially including a few benchmarks with conditions that generally have little to no opioids prescribed and are pretty consistent and a couple that generally require quite a lot of opioids uniformly, and then providing a range for those benchmarks that exceeds "0." In that context, he was less worried about it inappropriately interpreted as a guideline. To add to all of the other points Dr. Cunningham made with which he agreed, the discussion could delve a little further into the individualized and patient-centeredness decisions about opioids and that having minimum opioid prescribing requirements for a lot of diagnoses may be as inappropriate as over-prescribing or as for under-prescribing because of unintended harms of that. As a caveat, in thinking about some of the guidelines that systems have instituted with minimum opioid prescribing guidelines, he wondered sometimes if some of these guidelines might be to try to reduce bias. For example, providers may be less likely to prescribe opioids to an African American patient than a Caucasian patient. Having a minimum amount guideline might help to avoid potential racial, ethnic, or other biases that providers may exhibit.

Ms. Castillo inquired as to whether there would be potential value in looking at the estimates by diagnosis using different databases such as Medicaid and VA to identify commonalities and differences and explore what that might mean.

Dr. Cunningham pointed out that there are other surveillance mechanisms in this country that CDC is part of, and a surveillance system is being built through the Prescription Drug Monitoring Programs (PDMPs) that 49 states have that monitors all controlled substances. Given the discussion about all of the limitations, this project made her think that having a dedicated surveillance system that builds upon what states are already doing would be very helpful in addressing some of the issues discussed. She recommended that consideration be given to addressing the limitations raised using emerging systems throughout the country.

Dr. Comstock added that this is a great tie into the earlier example about NVDRS now being a multi-use platform. Two decades ago, they were talking about antibiotic prescribing and now they are talking about opioid prescribing. If there is an effort to establish that kind of surveillance system, it should not be opioid-specific. It should be prescribing practices broadly.

Dr. Coffin inquired as to whether there was an intent to take a vote.

Dr. Greenspan said that the hope was that the BSC would make a recommendation on how CDC should move forward on this project.

As a prevention scientist, **Dr. Frye** said she continued to struggle with the limitations on this project a priori were so set and perhaps why a more comprehensive exploration, descriptive or otherwise, was not articulated from the outset. Recognizing that all datasets have limitations and this would be a patchwork, there is a potential to examine some of the health systems that moderately approximate international systems. It seems that a much more comprehensive approach could be taken potentially, but it would take more time and effort. Given that the purpose is to get information out as quickly as possible, she suggested that perhaps the BSC could pose some recommendations or ideas about recommendations that would allow that to occur while also perhaps attending to some of the other ideas. She suggested that one option to move forward would be to articulate some recommendations based on the discussions. With that in mind, the agenda was reorganized to work on the agenda-setting process and hear public comments. Dr. Coffin first presented some draft recommendations.

BSC Draft Recommendations

Phillip Coffin, MD
Chair, Opioid Prescribing Estimates WG
Director of Substance Use Research
Center for Public Health Research

Based on the WG deliberations and report and the full BSC discussion, **Dr. Coffin** presented the following draft recommendations for BSC consideration and discussion:

1) CDC should proceed with the first aim to utilize the Optum dataset to describe current prescribing practices for a more limited set of diagnoses based on the concerns raised by the WG and BSC about the limitations of the dataset, caveats, and precautions.

2) CDC should further explore alternative datasets (Medicaid, VA, Kaiser, Chapter 55 Dataset in Massachusetts) for potential use in the analysis to determine whether they are feasible to use in this context and valid to compare the data to describe the current prescribing practices among other populations for other diagnoses.

3) Regarding the benchmarking aspect of the analyses, there are three options:

    a. Eliminate the benchmarking component entirely
    b. Proceed with the inclusion of benchmarks with a very limited set of diagnoses, as determined by CDC based on the quality of data and perhaps extremes of guidelines, particularly avoiding diagnoses where the guidelines and data are ambiguous
    c. Proceed with the inclusion of benchmarks as originally planned with a full set of diagnoses

Draft Recommendation Discussion Points

Dr. Comstock posited that just having CDC identify all of the databases available that have this information, as well as the strengths and weaknesses of each, would be incredibly useful to researchers. For example, the National Collegiate Athletic Association (NCAA) Injury Surveillance System (ISS) includes information about which collegiate athletes receive opioid prescriptions and how much. She also suggested voting on each of these recommendations individually.

Dr. Frye agreed and pointed out that such an analysis also would inform extramural research funding and priorities.

Dr. Liller requested clarity about whether the third recommendation would be based only on the limited data from the Optum dataset, or if it was meant to occur after examining other data sources.

Dr. Coffin indicated that his intent was to leave the decision about the third recommendation up to CDC based on other datasets.

Dr. Schwebel said it struck him that in elementary statistics classes, they learned about the difference between mean and standard deviation. Part of what they were really talking about here was the variance in prescribing. That may be an instructive way to think about the focus, how it is presented, and how it is interpreted.

In response to the proposal to look at alternative datasets to work with this analysis, **Dr. Mikosz** indicated that they have done some of this work already. In trying to narrow down to the Optum Labs dataset and the one that they would move forward with for this project, they considered the pros and cons of other publicly available datasets. This is how they determined that the Optum Labs dataset has the best combination of the clinical data that would be used for this study. A con to a lot of other publicly available datasets is that they do not have the granularity of clinical, provider, and patient data to be able to get a sense of current opioid prescribing practices. They do appreciate the feedback to look at other potential sources that they may not have considered. As a point of clarification, it is being referred to as “alternative” datasets, but CDC would see this as “complementary” to what they are doing with Optum Labs data rather than in place of Optum Labs data.

Dr. Comstock requested that the work already done on the strengths and weaknesses of the datasets CDC has reviewed be compiled and made available to other researchers. **Dr. Hedlund** supported this suggestion.

Mr. Mikosz clarified that they have not performed any analyses with these datasets. They used publicly available details about what these datasets do and do not include to help weigh into their decision about what they would move forward with. The information they used to make decisions about these datasets is already publicly available for each of these datasets.

BSC Recommendations & Votes

Dr. Coffin revised the draft recommendations to put forth for a vote based on the discussion, which are included with this section for continuity although this session took place following other agenda items that were rearranged. The public comments provided were taken into consideration. Upon reconvening, he presented the revised version and incorporated the final edits suggested for the vote. The BSC members voted upon each recommendation individually as follows:

1) Proceed with the descriptive analysis of opioid prescribing through the Optum claims dataset with consideration of the concerns and documentation of limitations noted by the WG and the BSC.

Motion / Vote: Recommendation 1

Dr. Hedlund made a motion to approve Recommendation 1, which **Dr. Crawford** seconded. The motion carried unanimously with no abstentions.

2) Further explore complementary datasets that may allow for better characterization of additional diagnoses and patient populations.

Motion / Vote: Recommendation 2

Dr. Comstock made a motion to approve Recommendation 2, which **Dr. Liller** seconded. The motion carried unanimously with no abstentions.

3) With regard to establishing best practices for evidence-based opioid prescribing to be compared to current prescribing estimates through Optum and potentially other datasets, select from the following options:

    a. Conduct this process for only a limited set of diagnoses based on the clarity of existing recommendations and quality of evidence to support those recommendations, carefully crafted to avoid misinterpretation as guidelines; or
    b. Limit the use of best practice data to framing the discussing of the descriptive data, with no direct or analytic comparison

Following discussion that pointed out that Item b would be part of Recommendation 1 and that the word "establishing" should be removed as it implies the intent to write new guidelines, Recommendation 3 was revised as follows for further discussion and a vote:

4) With regard to informing the evidence around best practices for opioid prescribing to be compared to current prescribing estimates through Optum and potentially other datasets, conduct this process for only a limited set of diagnoses based on the clarity of existing recommendations and quality of evidence, carefully crafted to avoid misinterpretation as guidelines.

OR

With regard to comparing current prescribing estimates through Optum and potentially other datasets to best practices for opioid prescribing, conduct this process for only a limited set of diagnoses based on the clarity of existing recommendation and quality of evidence, carefully crafted to avoid misinterpretation as guidelines.

Discussion Points

Dr. Franklin said he struggled a great deal with just publishing counts. One rule of epidemiology outside of counting is to provide some insight into the how/why this is being done. The information also should be instructive to some degree. If just the estimates are published, this raises the question of "So what." If there is utility and there are guidelines, this should be contextualized outside of just providing counts.

Dr. Schwebel agreed. He said that while he fully recognized that these data are imperfect, he is convinced that even imperfect data can add incrementally to the science. The more science they can do, the more comparisons, the more research, the better. He remained in favor of Recommendation 3 (he did not state whether he meant as presented or revised). He trusts their CDC colleagues to present the information carefully, cautiously, and with all of the caveats needed.

Dr. Cunningham emphasized that the concern remained that there are real harms that could occur if the data presented are interpreted as conclusions. It is questionable whether conclusions can be made based on the existing guidelines. It was not clear to her that something is better than nothing if it potentially could lead to harm.

Mr. Miskis expressed concern that without the Medicaid data, they would be excluding people with disabilities and older adults.

Dr. Frye inquired as to whether it would be possible to consider Tabling Recommendation 3, for the BSC to get feedback on Recommendations 1 and 2 as that work proceeds, and reconsider Recommendation 3 during a future BSC meeting based on the results from Recommendations 1 and 2. There seemed to be enough concern regarding whether exploration of the complementary datasets would be sufficient to address some of the big gaping holes. The issue about the evidence-base regarding best practices was emphasized as much during the discussion. Hearing it just now framed in that way struck her as the comparison potentially being weak on both sides in terms of the estimates that would come from a limited dataset and what it is being compared to, which could be a consensus statement.

Dr. Crawford thought that would be the responsible path, given that so many questions were still on the table.

Dr. Greenspan expressed concern that if they proceed with Recommendation 1, which is the descriptive analysis, that would need to be put in some context in any kind of discussion section. This would mean to some extent having to refer to some kind of clinical guidelines. Some guidelines are more rigorous than others, and she would like to know that there is a recommendation to at least move forward with that type of context and table direct comparisons. If they proceed with Recommendation 1, the next step before any publication would be to put that out for public comment. This would allow for further consideration before ever moving to publishing the results. They are trying to be careful and deliberate about that knowing that there are limitations.

Dr. Coffin said he thought they were all in agreement that any conduct of Recommendation 1 would involve contextualizing the results in existing standards.

Dr. Daro Tuggle emphasized that while performing the Optum analysis, it would be important to look at other databases. Although they may not be appropriate for national estimates, they may be very helpful at a regional or state level.

Motion / Vote: Recommendation 3

Dr. Frye made a motion to table Recommendation 3 until the BSC is presented with results from Recommendations 1 and 2 during a future BSC meeting, at which time Recommendation 3 will be revisited. **Dr. Daro Tuggle** seconded the motion. The motion carried unanimously with 2 dissentions and no abstentions.

Agenda-Setting for Next Meeting

Arlene Greenspan, DrPH, MPH
Associate Director for Science
National Center for Injury Prevention and Control
Centers for Disease Control and Prevention

Dr. Greenspan distributed the agenda-setting template, which she reminded everyone was created previously to help the group work through agenda-setting ideas for topic areas for future BSC meetings. For example, the CDC Foundation presentation earlier in the day was a direct result of a recommendation from a BSC member to hear more about the CDC Foundation's work. NCIPC tries to blend its need with topics the BSC would like to hear more about from the Center's portfolio. Most relevant would be the kinds of scientific presentations the group would like to hear. The following suggestions were made:

- Consider establishing a WG or starting with a presentation focused on the state-of-the-art of analyses pertaining to structural violence:
    - At the state, institutional, clinic, educational (particularly in the African American community, which can lead to aggressive behavior, particularly homicide), policy, and other levels that potentially lead to harms such as ACEs and adverse life experiences
    - In terms of the fact that there is no equity metric yet to assess access to funding, funding levels, who is receiving grants to assure and rule out funding disparities based on race, gender, or type of institution
- Provide further information on what the BSC can and cannot talk about
- Expand on the implications of public-private partnerships in terms of workforce stability

- ❑ Discuss preventing violence related to firearms in terms of:
    - ➢ Suicides and alcohol-involved suicides
    - ➢ How firearm-related violence also contributes to homicides
- ❑ Continue the discussion on NVDRS findings, particularly now that all states have been funded
- ❑ Engage in more discussion on toxicology screens with regard to:
    - ➢ How to boost the rates of toxicology screens for all drugs and alcohol
    - ➢ The role of drugs and alcohol in motor vehicle crashes, suicides, and workplaces
    - ➢ Standardization of how Coroners/MEs determine COD
- ❑ Provide more information about the effect size/long-term impact of NCIPC's various types of funding in terms of:
    - ➢ The funding put into ICRCs, versus how many publications or policy changes, versus individual NOFOs, versus targeted contracts
    - ➢ Equity outcomes and measures in terms of tenure/promotions and the numerous data that are coming out about gender bias in academia, at every level, in every form and then compounded by racial and ethnic disparities and implicit and explicit bias
    - ➢ If/how research is being used in precedent setting and statutes and whether legal case law is being included in these outcomes
    - ➢ Dr. Austin volunteered to present a NHTSA update
    - ➢ Dr. Hedegaard would be happy to provide an NCHS update
- ❑ Provide information on overdose and the Center's expanded efforts being made in that space
- ❑ Further discuss the role of cannabis in terms of:
    - ➢ In the space of opioids
    - ➢ In the space of cross-cutting issues around violence and injury
    - ➢ CDC's role in differentiating between tetrahydrocannabinol (THC)-containing products versus non-THC cannabidiol (CBD) products with regard to motor vehicle crashes, potential protective factors, and as an alternative to opioid issues
- ❑ Provide ongoing updates on:
    - ➢ Sexual violence and child maltreatment analyses
    - ➢ RPE programs and the impact they are having, particularly in the context of the landscape around federal guidance and the potential rollback of Title IX regulations around SV reporting, prevention, and response on campuses
    - ➢ Youth violence to better understand CDC's position, particularly with regard to the evidence base related to mitigation and elimination of youth violence, as well as social determinants related to family instability
    - ➢ ACEs and adverse life experience
    - ➢ Fatality Reviews and how those are being implemented locally and in states, particularly related to opioid-related deaths and trying to ferret out the difference between intentional and unintentional deaths

- Perhaps SAMHSA could provide a general update, given the significant amount of resources that SAMHSA has been allocating to states to look for potential areas of synergy, which could be very instructive for NCIPC's work

Public Comments

Oscar Alleyne, DrPH, MPH
Senior Advisor for Public Health
National Association of County and City Health Officials

Dr. Alleyne reported that the National Association of County and City Health Officials (NACCHO) has collaborated with CDC to develop a local opioid overdose prevention and response program, through which they have worked with four high-burden, high-overdose, and high-prescribing pilot sites in partnership with local health departments in those affected jurisdictions, which include: Manchester, New Hampshire; Bell County, Kentucky; Boone County, West Virginia; and Dayton, Ohio. All sites participated in a 3-day site visit and engaged stakeholders to support the development of individual community action plans, and adopted the Academic Detailing model to fit the needs of their communities. More specifically, through collaboration with their HIV/STI Viral Hepatitis Team, they have been able to look at local harm reduction in Communities of Practice (CoP), including in those particular pilot sites. NACCHO found that their work with CDC and the opioid project has specifically helped with expansion to 6 additional sites with Academic Detailing and community initiatives. They are working with the Office of National Drug Control Policy's (ONDCP's) Heroin Response Strategy Pilot Program to support additional sites in Georgia, North Carolina, Michigan, Pennsylvania, and Tennessee to evaluate strategies for reducing overdoses in local communities.

The point here is that the need to increase the capacity of large county, city, and state health departments to respond effectively to the opioid epidemic is detailed through two major strategies to: 1) expand surveillance and overdose response programs to those communities across the county, and increase partnerships with healthcare providers and organizations that are represented; and 2) support appropriate and effective opioid prescribing based on CDC guidance. NACCHO hopes that the BSC will support work that will allow them to look at the lessons learned from the opioid prescribing practices and best practices at the local level to ensure that the best practices are available through Academic Detailing, as well as the key messaging that will be important for looking at the lowest effective dose, how PDMD data can be used to determine patients who have previously filled prescriptions, and to ensure patient safety with respect to other sedating drugs.

Regarding the conversation about NVDRS, the role of VDRSs is critical. However, the lack of access of those data to sub-counties is excruciatingly painful. Whether the data are a comprehensive aggregate of the state-level for federal needs or county-specific, it hides the ability for the access point to get data for those neighborhoods that are particularly of concern to develop strategies for intervention. It would be greatly appreciated if there is a mechanism for the BSC to make recommendations to the associated federal partners to provide those data at a more granular level to be a tool for local health departments.

Sharon Nieb, PhD
Associate Program Director
Injury Prevention Research Center at Emory

Dr. Nieb said that she very much enjoyed listening to the comments from the BSC throughout the day. She indicated that the Injury Prevention Research Center at Emory has a statewide Drug Safety Task Force, and that a couple of its members joined her in attending this BSC meeting. She emphasized that in terms of research and opioids, it is very important to examine the cross-cutting issues. For example, it is known that taken opioids affects falls among older adults, TBI, suicide, motor vehicle crashes, and various other issues. She stressed that more of this type of research is needed.

Announcements / Adjournment

During the closing session, the following announcements were made:

- **Dr. Hedlund** indicated that the following two reports of interest have been published and are available on the Governors Highway Safety Association (GHSA) website:
  - *Drug Impairment Driving: Marijuana and Opioids Raise Critical Issues for States*
  - *Traffic Safety Impacts of Marijuana Legalization*

- **Dr. Compton** made the follow announcements:
  - NIH released over 30 funding announcements on December 10, 2018 related to NIH's Helping to End Addiction Over the Long-term (HEAL) Initiative. This is NIH's announcement to the field of the availability of extramural research funds to address the opioid crisis in two major ways, which are to: 1) address addiction and overdose directly, which NIDA has primarily been working on along with extensive work in the area of pain; and 2) address alternatives to opioids in the long-run.
  - NIH has a specific request for information from the field regarding what epidemiology pertaining to the opioid crisis needs to be performed. NIDA is somewhat uncertain about what should be the next directions for its epidemiology research programs related to the opioid crisis, and would appreciate everyone's input. Those comments are due by the end of December. He will share a short email to share with the BSC.

- **Dr. Cattledge** reported that Healthy People 2030 is now available for public comments. NCIPC would appreciate comments, particularly those pertaining to injury and violence prevention. NCIPC will send the BSC members the link for public comments, which will be open through January 19, 2019.

- **Dr. Frye** indicated that potential changes to Title IX are in a public comment period through January 28, 2019.

Dr. Frye thanked everyone for a robust, very intellectually stimulating, engaged discussion of what was before them. Speaking on behalf of all of the BSC members, she thanked CDC and recognized the enormous amount of effort, work, intelligence, and heart they bring to their work and their roles.

Dr. Greenspan also thanked everyone for such a robust discussion and their contribution, especially with regard to the opioid prescribing estimates effort. This is a difficult and complicated topic and NCIPC knew going into this that there was not an easy answer. She thanked those in the room and on the phone who participated in the Opioid Prescribing Estimates WG for the yeoman's work they did in getting this done, in addition to the 50 plus individuals who have contributed to this effort. She said she looks forward to future discussions, and recognized those who are new to the BSC for having added a lot to those discussions.

With no further business posed or questions/comments raised, Dr. Frye thanked everyone for their attendance and participation and officially adjourned the twenty-eighth meeting of the NCIPC BSC at 4:20 PM.

Certification

I hereby certify that to the best of my knowledge, the foregoing minutes of the December 12, 2018 NCIPC BSC meeting are accurate and complete:

09/01/19
Date

Victoria Frye, MPH, DrPh
Chair, NCIPC BSC

Attachment A: Meeting Attendance

BSC Members

Donna H. Barnes, Ph.D.
Associate Professor
Department of Psychiatry and Behavior Sciences
Howard University

Phillip Coffin, Ph.D.
Director of Substance Use Research
Center for Public Health Research
San Francisco Department of Public Health

R. Dawn Comstock, Ph.D.
Associate Professor
Department of Epidemiology
School of Public Health
University of Colorado at Denver

Kermit Crawford, Ph.D
Associate Professor in Psychiatry
Department of Psychiatry Psychology
School of Medicine
Boston University

Chinazo Cunningham, M.D., M.S.
Division of General Internal Medicine
Albert Einstein College of Medicine
Montefiore Medical Center

Elizabeth Eckstrom, M.D., M.P.H.
Associate Professor of Medicine
Division of General Internal Medicine & Geriatrics
Oregon Health & Science University

Frank A. Franklin, II, Ph.D., J.D., M.P.H.
Principal Epidemiologist and Director
Community Epidemiology Services
Multnomah County Health Department

Victoria Frye, Ph.D.
Associate Medical Professor
School of Medicine
City University of New York

James Hedlund, Ph.D.
Principal
Highway Safety North

Todd Herrenkohl, Ph.D.
Professor and Co-Director 3DL Partnership
School of Social Work
University of Washington

Mark S. Kaplan, Dr.P.H.
Professor of Social Welfare
Department of Social Welfare
Luskin School of Public Affairs

Karen D. Liller, Ph.D.
Professor
Department of Community and Family Health
University of South Florida,
College of Public Health

David C. Schwebel, Ph.D.
Associate Dean for Research in the Sciences
University of Alabama at Birmingham

Debora Daro-Tuggle
Senior Research Fellow
Chaplin Hall
University of Chicago

Federico Vaca, M.D., M.P.H.
Professor and Vice Chair of Faculty Affairs
Department of Emergency Medicine
School of Medicine
Yale University

Daniel J. Whitaker, Ph.D.
Professor, Director
Health Promotion & Behavior
Georgia State University

Ex-Officio

Rory Austin, Ph.D.
Chief, Injury Prevention Research Division
Department of Transportation
National Highway and Transportation Safety Administration

Melissa Brodowski, Ph.D., M.S.W., M.P.H.
Senior Policy Analyst
Administration for Children and Families

Dawn Castillo, M.P.H.
Director
Division of Safety Research
National Institute for Occupational Safety and Health
Centers for Disease Control and Prevention

Mindy Chai, J.D., Ph.D.
Health Science Policy Analyst
Science Policy and Evaluation Branch
National Institutes of Health
National Institute of Mental Health

Wilson Compton, M.D., M.P.H.
Deputy Director
National Institute on Drug Abuse
National Institutes of Health

Holly Hedegaard, M.D., M.S.P.H.
Senior Service Fellow
National Center for Health Statistics
Centers for Disease Control and Prevention

Calvin Johnson
Deputy Assistant Secretary
Department of Housing and Urban Development

Lyndon Joseph, Ph.D.
Health Scientist Administrator
National Institute on Aging
National Institutes of Health

Amy Leffler, Ph.D.
Social Science Analyst
National Institute of Justice
Department of Justice

Valerie Maholmes, Ph.D., CAS
Chief, Pediatric Trauma and Critical Illness Branch
National Institutes on Health
Eunice Kennedy Shiver National Institute of Child Health and Human Development

Constantinos Miskis, J.D.
Bi-Regional Administrator
Administration on Community Living,
Administration on Aging

Thomas Schroeder, M.S.
Director
Consumer Product Safety Commission

RADM Kelly Taylor, M.P.H.
Director, Environmental Health and Injury Prevention
Indian Health Service

CDC Attendees

Mick Ballesteros Ph.D.
Brad Bartholow, Ph.D.
Matt Breiding, Ph.D.
Gwendolyn Cattledge, Ph.D., M.S.E.H.
Jieru Chen, Ph.D.
Leslie Dorigo, M.P.H.
Deborah Dowell, M.D., M.P.H.
Corrine Ferdon, Ph.D
Beverly Fortson, Ph.D.
Leroy Frazier, M.S.P.H.
Arlene Greenspan, Dr.P.H., M.P.H.
Jeffery Gordon, Ph.D.
Tamara Haegerich, Ph.D.
Jeffrey Herbst, B.A., Ph.D.
Susan Hillis, Ph.D.
Dan Holcomb, B.S.
Debra Houry, M.D., M.P.H
Tonia Lindley
Melissa Mercado-Crespo, M.P.H.
Melissa Merrick, Ph.D.
Sue Neurath, Ph.D.
Rita Noonan, Ph.D.
Erin Parker, Ph.D.
Kelly Sarmiento, M.P.H.
Erin Sauber-Schatz, M.P.H., Ph.D.
Tom Simon, Ph.D.
Deb Stone, Ph.D.
Duane Stone, C.P.A., C.G.F.M.
Mildred Williams-Johnson, Ph.D., D.A.B.T.

Table 1

First Name	Last Name	Organization
Shezza	Shagarabi	NCIPC
Dr. E. Oscar	Alleyne, DrPH, MPH	National Association of County and City Heath Officials
Julia	Zhang	WCIRB California
Sharon	Nieb	Emory University
Dr. E. Oscar	Alleyne, DrPH, MPH	National Association of County and City Heath Officials
Tamra	Meyer	FDA
Roger	Chou	Pacific Northwest Evidence-based Practice Center, Oregon Health & Science University
Mallika	Mundkur	FDA
Cyndi	Trang	NASEM
shobha	Thangada	Connecticut department of Public Health
Stacy	Stanford	NACCHO
Dametreea	Carr	Pinal County Public Health Services District
Janelle	Derbis	FDA
Sara	Wittayanukorn	FDA
Judy	Staffa	FDA
Annemarie	Mathews	Office of the SC Attorney General
Esi	Nkyekyer	University of Washington
Eric	Maroyka	American Society of Health-System Pharmacists (ASHP)
Gregory	Terman	University of Washington
Elizabeth	Eckstrom	Oregon Health & Science University
Dave	Duden	Deloitte
Derek	Bergsten	Rockford Fire Department
Brian	Chin	CDC/NIOSH
Tyler	Payne	Colorado Consortium for Prescription Drug Abuse Prevention
Robert	Valuck	Colorado Consortium for Prescription Drug Abuse Prevention
Denise Zoe	Algire	Albertsons Companies
kathryn	mueller	Colorado Div of Workers Compensation, Univ of Co Medical Center
Tim	Tucker	NCCI
Jennifer	Edwards	GE Foundation
Jennifer	Long	WSIB
Ann Marie	Dale	Washington University St. Louis
Arlene	Remick	ACOG
Margaret	Villalonga	ACOG
Steve	Wurzelbacher	CDC-NIOSH
Jennifer	Barnhouse	The Alliance for the Treatment of Intractable Pain
Tammy	Nicholson	Forsyth County Drug Awareness Council
Richard	Lawhern	Alliance for Treatment of Intractable Pain
Humayun	Chaudhry	Federation of State Medical Boards
Patricia	Daugherty	Walgreens
Jaymie	Mai	WA Department of Labor & Industries

First Name	Last Name	Organization
Thomas	Tape	University of Nebraska
Lori	Cassity Murphy	Medical Association of Georgia
Jessica	Tuttle	GA Department of Public Health
Sharon	Nieb	Emory University Injury Prevention Research Center
Anita	Balan	American College of Preventive Medicine
Stephanie	Busch	State of Vermont
Trisha	Mueller	CDC
Andrea	Carmichael	CDC
Mahwish	Javed	Children's Healthcare of Atlanta
Ashley	Walton	American Society of Anesthesiologists
Anita	Balan	American College of Preventive Medicine
Jenna	Ventresca	American Pharmacists Association
Asal	Sayas	amfAR

Attachment B: Acronyms Used in this Document

Table 2

Acronym	Expansion
ACC	American Chemistry Council™
ACEs	Adverse Childhood Experiences
ACPM	American College of Preventive Medicine
Action Alliance	National Action Alliance for Suicide Prevention
ADS	Associate Director for Science
AHRQ	Agency for Healthcare Research and Quality
AMDG	Agency Medical Directors Group
ASCO	American Society of Clinical Oncology
ATSDR	Agency for Toxic Substances and Disease Registry
BRFSS™	Behavioral Risk Factor Surveillance System™
BSC	Board of Scientific Counselors
CAN	Child Abuse and Neglect
CBD	Cannabidiol
CDC	Centers for Disease Control and Prevention
CDC FCU	CDC Federal Credit Union
CDPHE	Colorado Department of Public Health and Environment
CIOs	Centers, Institutes, and Offices
CNC	Colorado National Collaborative
COD	Cause of Death
CoP	Communities of Practice
CSELS	Center for Surveillance, Epidemiology, and Laboratory Services
DDCF	Doris Duke Charitable Foundation
DDPI	Data-Driven Prevention Initiative
DFO	Designated Federal Official
DUIP	Division of Unintentional Violence Prevention
DVP	Division of Violence Prevention
ED	Emergency Department
EfC	Essentials for Childhood
EHR	Electronic Health Record
EIS	Epidemic Intelligence Service
EMR	Electronic Medical Record
ERPO	Extramural Research Program Office
ESOOS	Enhanced State Opioid Overdose Surveillance
ESSENCE	Early Notification of Community-based Epidemics
FACA	Federal Advisory Committee Act
FFI	Food Fortification Initiative
FNIH	Foundation for the National Institutes of Health
FTE	Fulltime Equivalent
FY	Fiscal Year
GAIN	Global Alliance for Improved Nutrition
GHSA	Governors Highway Safety Association
GSK	GlaxoSmithKline
HCP	Healthcare Providers
HEAL	Helping to End Addiction Over the Long-term Initiative

Acronym	Expansion
HHS	(United States Department of) Health and Human Services
HP	Hewlett Packard
ICRC	Injury Control Research Center
IPV	Intimate Partner Violence
MBCs	Minimum Bactericidal Concentrations
MASO	Management Analysis and Services Office
MAT	Medication-Assisted Treatment
ME	Medical Examiner
MICs	Minimum Inhibitory Concentrations
MMWR	*Morbidity and Mortality Weekly Report*
MS	Mass Spectrometry
MSAs	Metropolitan Statistical Areas
NACCHO	National Association of County and City Health Officials
NCAA ISS	National Collegiate Athletic Association Injury Surveillance System
NCBDDD	National Center on Birth Defects and Developmental Disabilities
NCCDPHP	National Center for Chronic Disease Prevention and Health Promotion
NCEH	National Center for Environmental Health
NCHHSTP	National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
NCHS	National Center for Health Statistic
NCIPC	National Center for Injury Prevention and Control
NGBH®	National Business Group on Health®
NGO	Non-Governmental Organizations
NHTSA	National Highway Traffic Safety Administration
NICHD	National Institute of Child Health and Human Development
NIDA	National Institute on Drug Abuse
NIH	National Institutes for Health
NNPHI	National Network of Public Health Institutes
NOFO	Notice of Funding Opportunities
NPS	National Parks Service
NSAIDs	Nonsteroidal Anti-Inflammatory Drugs
NVDRS	National Violent Death Reporting System
NVSS	National Vital Statistics System
OGS	Office of Grant Services
OPHPR	Office of Public Health Preparedness and Response
ONDCP	Office of National Drug Control Policy
OPIS	Overdose Prevention in States
ORCU	Opioid Response Coordinating Unit
OSI	Office of Strategy and Innovation
OSTLTS	Office for State, Tribal, Local and Territorial Support
OUD	Opioid Use Disorder
PDMP	Prescription Drug Monitoring Program
PfS	Prevention for States
PI	Principal Investigator
RPE	Rape Prevention and Education Program
RWJF	Robert Wood Johnson Foundation
S2	Surge Support Only
SCD	Sickle Cell Disease
SEPs	Special Emphasis Panels

Acronym	Expansion
SME	Subject Matter Experts
SUD	Substance Use Disorders
SV	Sexual Violence
SVCF®	Silicon Valley Community Foundation®
TA	Technical Assistance
TBI	Traumatic Brain Injury
THC	Tetrahydrocannabinol
UPS	United Parcel Service
US	United States
VACS	Violence Against Children Survey
WG	Working Group
WHO	World Health Organization
YV	Youth Violence
YVPC	Youth Violence Prevention Center
ZKP	Zika Prevention Kit